

# MAKU‘U



## REGIONAL PLAN

April 2008





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Hawaiian Homes Commission

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The Department of Hawaiian Home Lands' (DHHL) mission is to manage effectively the Hawaiian Home Lands Trust and to develop and deliver lands to native Hawaiians. DHHL works in partnership with other government agencies, private sector entrepreneurs, and non-profit organizations to carry out this mission. This work includes a collaborative vision, long-range planning, resource allocation, and project-specific joint ventures. DHHL believes that these partnerships benefit not only its native Hawaiian beneficiaries but the larger community as well.

This report has been prepared to facilitate the work of such partnerships as DHHL and others develop lands in Maku'u. Specifically, this report is intended to:

- *Help identify opportunities for partnerships with DHHL in the development of its Maku'u lands;*
- *Provide information essential to the planning of projects, services, and entrepreneurial ventures;*
- *Identify key issues, opportunities, and constraints affecting regional development and area improvements;*
- *Assist in the efficient allocation of resources by DHHL and its partners; and*
- *Identify priority projects that are essential to moving development and community improvement projects forward.*

DHHL knows that regional development is a dynamic process with constantly changing opportunities and emerging issues. With that in mind, this document will be regularly updated as development projects progress and priorities change.





**Linda Lingle**  
*Governor*



**James "Duke" Aiona**  
*Lieutenant Governor*



**Dan K. Inouye**  
*U.S. Senator*



**Daniel K. Akaka**  
*U.S. Senator*



**Mazie Hirono**  
*Congressional District 2*



**Micah A. Kāne**  
*DHHL Commissioner  
Chairman*



**Bob Lindsey**  
*Trustee - OHA*



**Russell Kokubun**  
*State Senatorial District 2*

# State, Federal, & County Leaders



**Clift Tsuji**  
*State House of Representatives  
District 3*



**Faye Hanohano**  
*State House of Representatives  
District 4*



**Robert N. Herkes**  
*State House of Representatives  
District 5*



**Harry Kim**  
*Hawai'i Mayor*



**J Yoshimoto**  
*Council District 3*



**Bob Jacobson**  
*Council District 6*



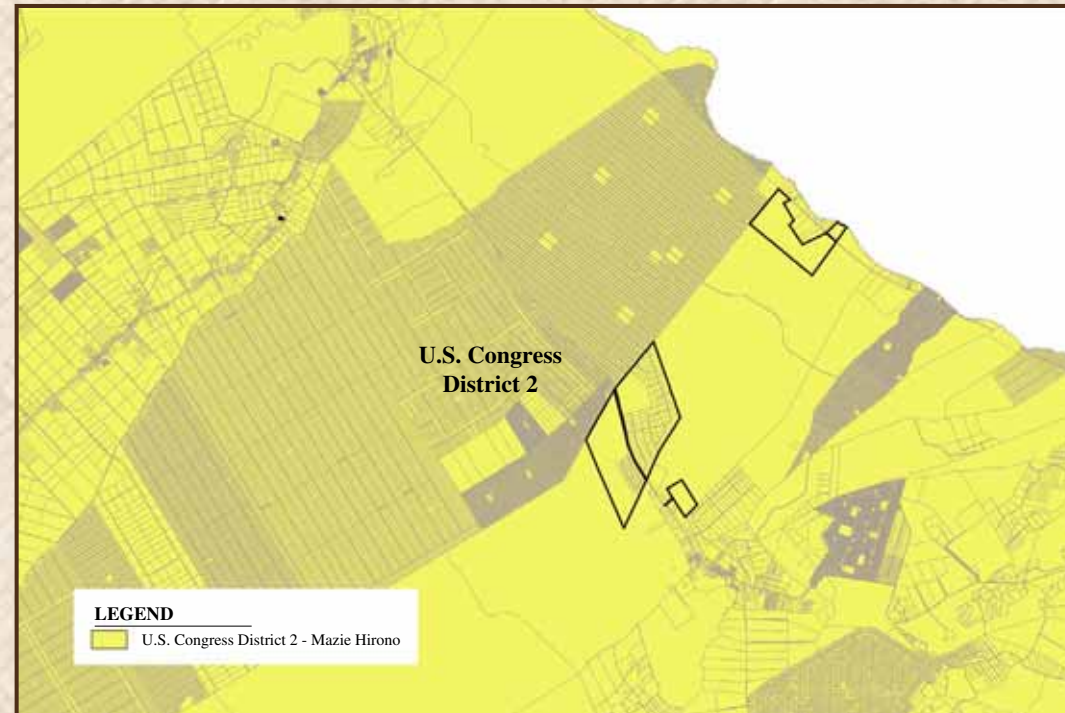
**Emily Naeole**  
*Council District 5*

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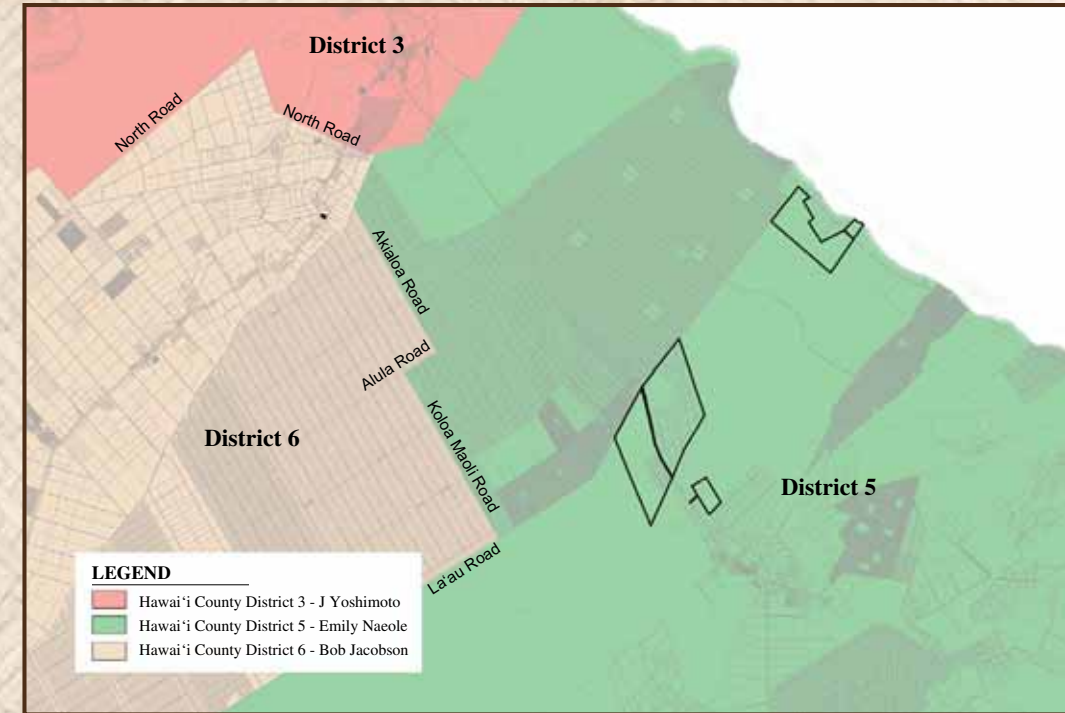


# Political Boundaries

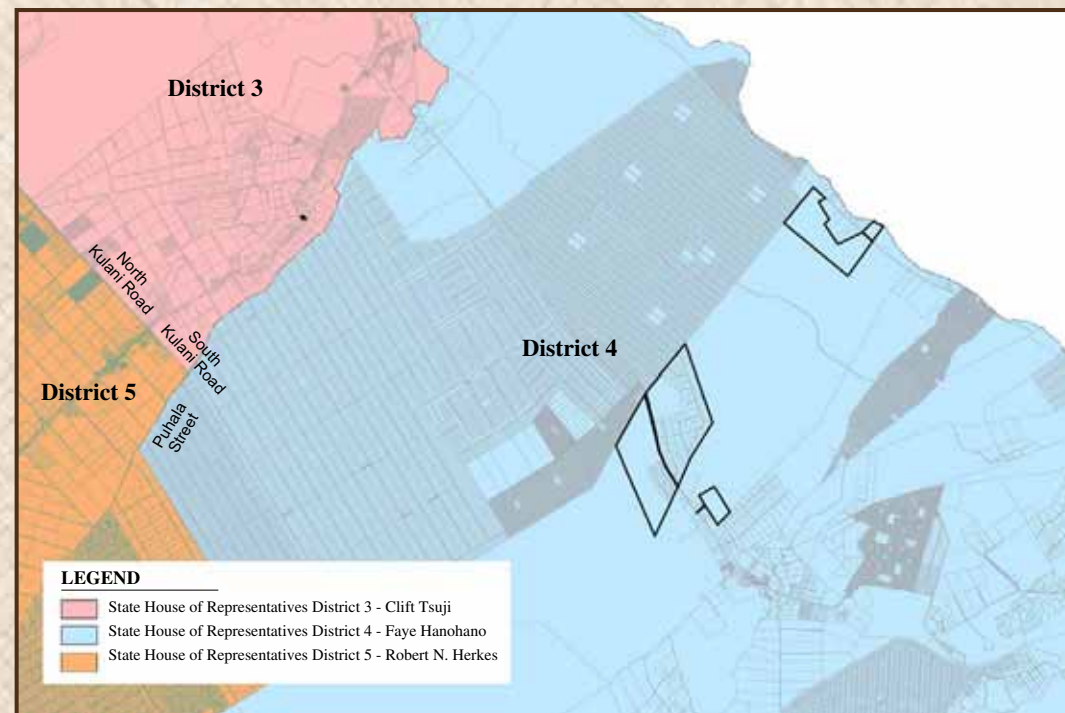
UNITED STATES CONGRESS - DISTRICT 2



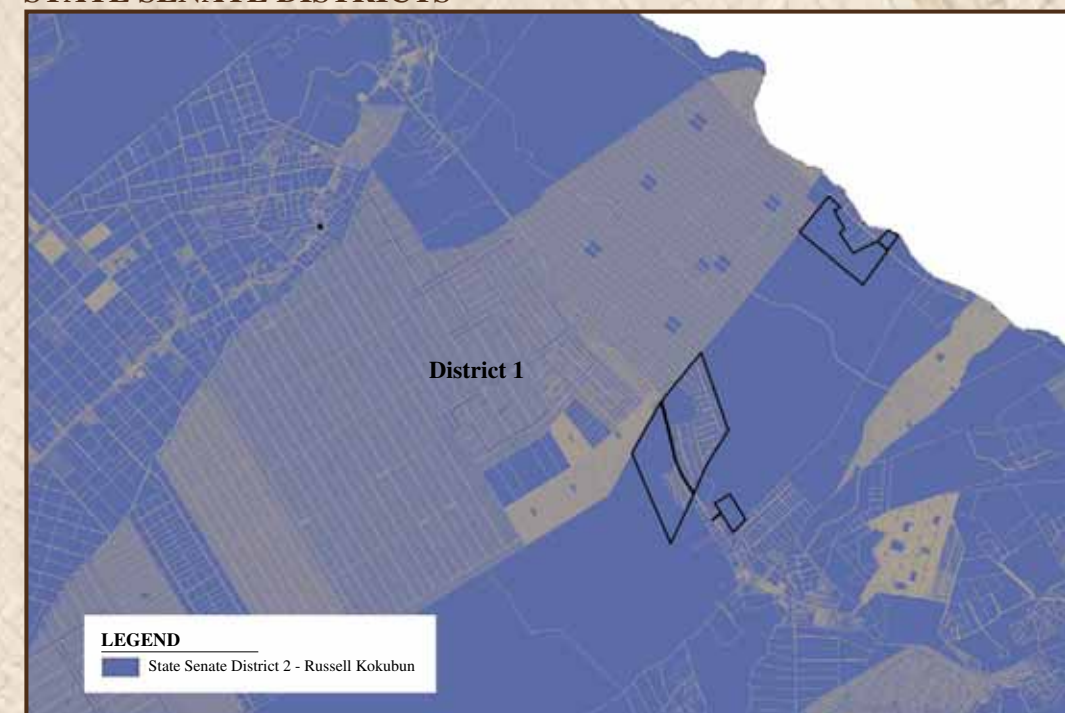
HAWAI'I COUNTY COUNCIL DISTRICTS



STATE HOUSE OF REPRESENTATIVES DISTRICTS



STATE SENATE DISTRICTS



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# Key Community Stakeholders



**Hidi Boteilho**  
*Maku'u Farmers' Association*



**Pua Fernandez**  
*Maku'u Farmers' Association*



**Eloise Ishimine**  
*Maku'u Farmers' Association*



**Lila Kahai**  
*Maku'u Farmers' Association*



**Ioane Kekahuna**  
*Maku'u Farmers' Association*



**Paula Kekahuna**  
*Maku'u Farmers' Association*



**Gwen Kupahu**  
*Office of Councilwoman Emily Naeole*



**Patrick Walsh**  
*Maku'u Farmers' Association*

## NOT PICTURED

**Dickie Ishima**, *Maku'u Farmers' Association*  
**Ana Kon**, *Maku'u Farmers' Association*  
**Emily Kahai**, *Maku'u Farmers' Association*  
**Karl Kunewa**, *Maku'u Farmers' Association*  
**Waikini Kunewa**, *Maku'u Farmers' Association*  
**John Kekahuna**, *Maku'u Farmers Association*  
**Lawrence Pedro**, *Maku'u Farmers Association*  
**Shirley Pedro**, *Maku'u Farmers Association*  
**Natalie Walsh**, *Maku'u Farmers' Association*  
**Brian Nishimura**, *Maku'u Farmers Association Consultant*

**Roberta Banks**, *Community Member*  
**Sharon D'Amone**, *Community Member*  
**John Don D'Amore, Sr.**, *Community Member*  
**Thomas G. H. K. Kai**, *Community Member*  
**Samuel Kaleleiki**, *Community Member*  
**Ira Kekaulua**, *Community Member*  
**Laurence Paho Jr.**, *Community Member*  
**Clifford S. K. Rocha**, *Community Member*  
**Heidi Waiamau**, *Community Member*

**Gayla Brown**, *Kanaka Council*  
**Luella Crutcher**, *Kanaka Council*  
**Teddy Fetalvere**, *Kanaka Council*  
**Kale Gumapac**, *Kanaka Council*  
**Reygene Richardson**, *Kanaka Council*

**Quince Mento**, *County of Hawai'i Fire Department*  
**Al Miller**, *FAA-Hilo SSC*  
**Glenn Miura**, *CDS International*  
**Rob Tucker**, *Puna CDP Working Group*

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# Key Community Partners



**Thomas Kaulukukui, Jr.**  
*Queen Lili'uokalani Trust, QLT/QLCC*



**Dee Jay Mailer**  
*Kamehameha Schools, CEO*



**Haunani Apoliona**  
*Office of Hawaiian Affairs, Chairperson*



**Laura L. Thompson**  
*Alu Like, Chairperson*

## NOT PICTURED:

**Jane H. Testa**, Research and Development Director  
**Kimo Lee**, W.B. Shipman  
**Ann Nathaniel**, Hui Mālama Ola Nā Iwi, Pana'ewa District President  
**Rockne Freitas**, Hawai'i Community College Chancellor

*The Puna Community Development Plan (CDP) is part of the overall County of Hawai'i General Plan. These CDPs help the County determine how the County distributes funds, passes laws, governs development, provides roads and public facilities, and generally makes decisions in the area until the year 2015. CDPs essentially translate the broad goals outlined in the County General Plan, into opportunities for implementation. The CDPs also serve as a forum for community input. Once drafted, the CDP will be adopted by the County Council as an ordinance, giving it the force of law.*

*PlanPacific, Inc. is currently facilitating the development of the Puna CDP. The process is guided by a community steering committee. Members of the committee were selected from a pool of applicants that was screened by the county Planning Department, appointed by the Mayor and confirmed by the County Council. The steering committee is responsible for: identifying and including the main stake holders; serve as community liaisons; advise the consultant; monitor progress; maintain the quality of the CDP, review all draft plans and recommend approval to the Planning Director; review amendments proposed by County Council during approval process and prior to adoption.*

*County Council imposed a moratorium on new zoning in many of the districts in West Hawai'i to allow the CDP process an opportunity to identify and resolve community issues. However, the Puna District is not affected by this moratorium. A draft of the CDP was released on December 31, 2007.*

*The members of the Puna CDP Steering Committee are:*

**Barbara M. Lively**  
*Aide to Councilmember Bob Jacobson*

**Kim Tavares**  
*Hawai'i Invasive Species Management and Educational Corp.*

**Stephanie Bath**  
*Licensed Massage Therapist*

**Eddie Alonzo**  
*County of Hawai'i, Highways Division*

**John Olson**  
*Self-Employed*

**Gregory Braun**  
*Asia Pacific Flowers*

**B. Martha Lockwood**  
*Geohazards Consultant International*

**Fredrick Warshauer**  
*United States Geological Survey*

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# Partnering Benefits & Examples

## Shared Costs & Multiple Financing Options

DHHL is working in partnership with other government agencies, the private sector and community organizations to develop its lands and improve community life. DHHL believes that partnerships are an effective way to leverage resources and capital investments, mitigate undesirable impacts of development, coordinate area growth, reduce risks in large scale community projects, and create broad community benefits.

These partnerships allow for better prioritization and coordination of infrastructure improvement and the development of regional and public residential facilities. This coordination helps individual organizations achieve their goals while bringing long term benefits to the community and region.



DHHL brings to these partnerships:

- Land for development in strategic locations
- Potential use of tax-exempt financing
- Access to legislative appropriations
- Access to federal funding such as HUD, USDA, SBA
- Flexibility in the application of development standards, zoning, and design
- Cultural understanding and resources

## Kūlana ʻŌiwi

- The consortium partnership includes: DHHL, The Queen Emma Foundation, Kamehameha Schools, Queen Liliʻuokalani Children’s Center, ALU LIKE, Inc., and the Office of Hawaiian Affairs.
- The center is designed to house the offices and programs run by these Hawaiian organizations.
- The concept of a “one-stop service center” for the Hawaiian people will facilitate the coordinated delivery of government and private services more efficiently.
- At Kūlana ʻŌiwi, each agency provides different services, such as child welfare, social and educational services for youth, health care services, and vocational training services geared to strengthen Hawaiian families, values and culture.



# Partnering Benefits & Examples

DHHL has participated in a number of successful partnerships. A few of these are highlighted here.

## Public Facilities Partnership

DHHL participated in a number of partnerships involving public facilities and community resources. The most notable partnerships brought together Hawaiian agencies and non-profit organizations into a multi-service complex where a broad range of programs are housed to serve the public. Such multi-service complexes have been built on Hawaiian Home Lands in partnership with Kamehameha Schools, Queen Lili'uokalani Children's Center, Alu Like, Papa Ola Lōkahi, the Office of Hawaiian Affairs, Hawaiian community organizations, and the counties.

These multi-service complexes are housing preschools, offices, meeting facilities, health clinics, and activity centers. For example, the Keaukaha homestead on Hawai'i is served by a County Park on DHHL land, next to a gymnasium and elementary school, DHHL and OHA offices, and a Kamehameha preschool.

Through a series of management partnerships with DLNR and the Nature Conservancy, unique ecosystems and historic sites are being protected. Examples include the Hakalau Forest Reserve, the 'Aina Hou Management Area, the Pālā'au and Mo'omomi preserves, the Kalaupapa peninsula, and the Kamā'oa-Pu'u'eo National Historic District where koa forests, endangered plants and animals, and native species are being protected for future generations.



*Kamehameha Preschools on DHHL Property*



## Infrastructure Partnership

DHHL has partnered with county governments and utility providers on infrastructure improvements that benefit the entire community. DHHL has participated in water-system development with the counties by providing funding, land easements, and access to federal and state programs. Examples include the extension of the Lower Kula Water System on Maui, the Waimea Irrigation System and the Maku'u Water System on Hawai'i, and the Wahiawā-Waipahu water system on O'ahu.

DHHL has also provided numerous easements over its lands to electrical, water, telephone, and cable companies to service both homestead areas and the general public.

## Residential Partnership

Through partnerships, DHHL has reduced the cost of homes to low-income beneficiaries. DHHL has done this by sharing in the cost of infrastructure, helping to secure tax credits, and using self-help methods of construction. Partnerships in Kapolei resulted in 70 rent-to-own units constructed by Mark Development using low-income tax credits and 45 self-help homes constructed with Menehune Development and Honolulu Habitat for Humanity. In these types of partnerships, DHHL provides the land, secures federal grants, and provides access to, or assistance in, acquiring tax credits, subsidies, or other financing.

- Self-help housing partnerships:
  - Construction of 41 homes in La'i'ōpua with Kōkua Housing Corporation
  - Construction of 45 homes in Kapolei with Menehune Housing Corporation and Honolulu Habitat for Humanity
- Co-location of various Hawaiian agencies and services providers on O'ahu, Moloka'i, and Maui
- Location of Kamehameha Preschools on DHHL property on several islands
- Partnership to create a community resource center with Chaminade University, Association of Hawaiian Civic Clubs, and other Hawaiian organizations





# History & Cultural Aspects of the Area

## Before The Overthrow

The Puna district of Hawai‘i Island encompasses an area approximately 500 square miles in size, including all Maku‘u lands. In ‘Olelo Hawai‘i, the word “Puna” literally translates to “spring of water” – a name most likely given in reference to the abundant water resources in the area.

The ancient landscape of Puna was covered with forest, brush, and vegetation prior to being transformed into ranchland and sugar cane fields. Post-native settlement archaeology reveals an area rich in religious significance as evidenced by the many heiau including: Mahina Akaaka Heiau, Nuikūkahī Heiau, Kohelele o Pele, and Kūki‘i Heiau. The Waha‘ula Heiau is a heiau of prominence located within the Puna area of Hawai‘i Volcanoes National Park. The majority of the archaeological sites located along the coast indicate a settlement pattern reliant on ocean resources. Numerous agricultural features indicate extensive cultivation of taro, sweet potato, and other traditional crops. Historically, the region supported wet and dry taro planting, banana, sugar cane, sweet potato, coconut groves, and breadfruit trees. The easternmost region of Puna is the sacred site known as Kumukahi. This locality receives the first light of dawn and was a place of healing and power.

Prior to the political unification of the islands by King Kamehameha the Great, the lands of Puna were governed by his rival cousin Keoua. Keoua raided Kamehameha’s villages in West Hawai‘i while he was away fighting for control of Maui. In retaliation, Kamehameha pushed Keoua’s armies back to Puna. On the trek back, a third of Keoua’s force was suffocated by a sulfuric density current from Kīlauea. Folklore famously describes the mass killing as a consequence for Keoua’s defiance of Pele.



Joseph Nāwahīokalani‘ōpu‘u

One of Puna’s most notable residents was Joseph Nāwahī, also known as Joseph Kaho‘oluhi Nāwahīokalani‘ōpu‘u. Nāwahī was a native Hawaiian legislator, lawyer, newspaper publisher, and painter. As a young man, he studied with Christian missionaries. He later became a member of the Hawaiian legislature, serving for 20 years (1872-1892), and was a member of the cabinet of Lili‘uokalani. He served as an elector, successfully supporting King Lunalilo ascension to the throne. Personally active in politics, he also served as President of the Hawaiian Patriotic League and publicly opposed the overthrow of the Hawaiian monarchy in 1893 by white American businessmen.

## After The Overthrow

Nāwahī’s efforts to perpetuate the Hawaiian community continued well after the Overthrow, including operating Ke Aloha ‘Aina, a Hawaiian nationalist newspaper. Today, a Hawaiian language immersion school named in his honor is in Kea‘au, Puna, Hawai‘i. Ke Kula ‘o Nāwahīokalani‘ōpu‘u educates students from grades K-12 in the Hawaiian language. In 1999, this school was one of two that graduated the first high school classes to have been educated entirely in the Hawaiian language in a century.

Puna has felt the negative effects of large paper subdivision activities during the 1950’s through 70’s. The generation of numerous small land parcels created a situation where most landowners purchased lots for investment purposes, but opted not to construct as a result of no infrastructure and poor property conditions. The lack of development created sparsely populated communities leading to public safety issues. As of recent, development in the Puna area has become more appealing due to the low cost of housing relative to other communities in Hawai‘i. Recent plans by the State Department of Transportation to widen Kea‘au-Pāhoa Road, and construction of a new high school in Kea‘au show evidence of a burgeoning population in Puna. The growth in residents will inevitably leading to greater changes for the region in near and distant future.



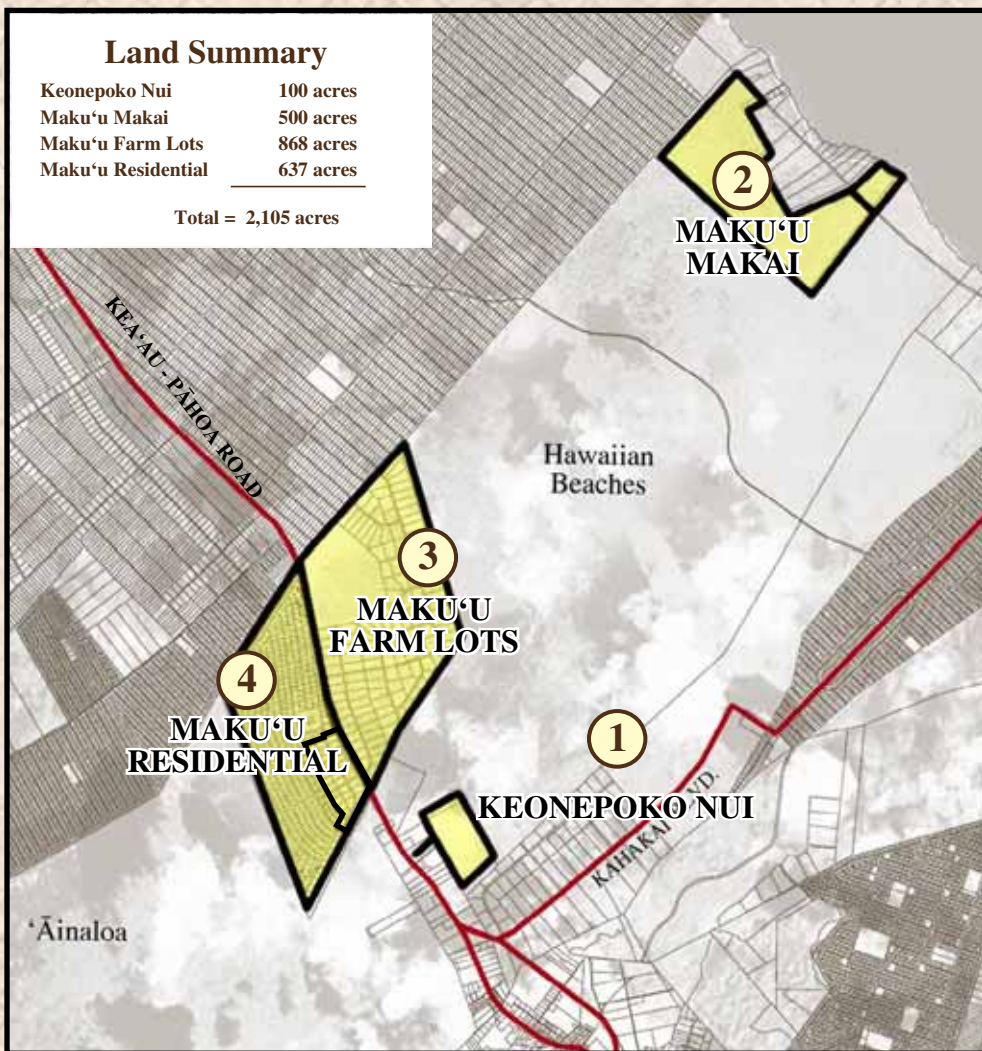
Aerial View of Maku‘u

Beyond Puna’s large subdivisions, its value as a geothermal resource has come into greater focus due to the increasing demand for alternative energy sources. Drilling for geothermal resources first commenced in 1976. However, the development of new geothermal wells over the past thirty years has not come without controversy. Many recent exploratory projects have faced steep opposition from residents and Native Hawaiians. Residents concerns largely involve outgassing of steam laden with sulfuric particulates. Native Hawaiians oppose the desecration of the volcano, and the goddess Pele.

Kīlauea, the island’s most visited attraction, has awed millions of tourists. However, its most recent volcanic activity has also created great destruction. Volcanic lava flows over the past twenty-five have consumed numerous residents in and around Kapoho, Kalapana, and Kaimū.



# Hawaiian Home Lands - Area Map



- 1 KEONEPOKO NUI**  
Keonepoko Nui is a 100-acre parcel located behind Keonepoko Homestead, approximately one mile southeast of the Pāhoa landing strip, and just under a mile northwest of Main Street Pāhoa. State lands border the east portion of the property, with Keonepoko Homestead to the west. Access is provided through a dedicated flag off Kea'au-Pāhoa Road.
- Current surrounding uses are agricultural, despite marginal soil quality. Access limitations and parcel size are primary constraints.

- 2 MAKU'U MAKAI**  
The Maku'u Makai lands total approximately 500 acres. Most of this seaward parcel is mauka of the Beach Road extension. A portion of the property extends across the Ala Hele O Puna Road extension to the coastline. The western boundary is adjacent to Hawaiian Paradise Park subdivision and State lands lie to the south and east. The parcel is accessible via an extension of Ala Hele O Puna Road. Ka'aahi Road is adjacent to the mauka boundary.
- The site is presently overgrown, with lowland shrubs and sparse tree cover predominating. Water and sewer service is currently not available for the parcel. Water and sewer system needs and associated costs constrain priority development at this time.

- 3 MAKU'U FARM LOTS**  
Maku'u Farmlots is approximately 868 acres and is located along the Kea'au-Pāhoa Road. The parcel is located roughly three miles from old Pāhoa Town, and 17 miles from Hilo. Tiki Gardens, Orchid Land Estates, and Paradise Park Subdivision are to the east, with State lands surrounding the northern, western, and southern boundaries. Kea'au-Pāhoa Road is the west of the farmlots.
- The majority of the 868-acre parcel was developed in 1998 with the development of the "Maku'u Farm Lots". This development is an agriculture subdivision with 127 five-acre lots.

Access to the farmlots is from Kea'au-Pāhoa Road. Smaller arterial streets have been developed by DHHL to provide access to the developed agriculture lots.

Some 181 acres of the 868-acre parcel are designated for two (2) Federal Aviation Administration (FAA) facilities. Approximately nine (9) acres of land have been withdrawn from the FAA's leased area and are licensed to the Maku'u Farmers' Association (MFA), where they operate the popular Maku'u Farmers' Market on weekends, its Mala training facility, and now propose to construct the MFA Community Center.

Approximately 29 farm lots do not have water service. The water system being developed for the proposed Hālonā-Maku'u and Pōpōkī-Maku'u subdivisions mauka of the farm lots would provide water to these lots that don't have water service.

- 4 MAKU'U RESIDENTIAL**  
The Maku'u Residential parcel is 640-acres and is located mauka of the existing Maku'u Farm Lots and the Kea'au-Pāhoa Road. There are three projects in the Maku'u Residential parcel.

The first project called the "Maku'u Agricultural Lots, Unit 1" was developed in 1998. This was a 100-acre project with 50 two-acre agriculture lots. Twelve of these two acre lots will be consolidated and resubdivided into residential lots and folded into the DHHL's proposed Maku'u-Hālonā Subdivision and Maku'u-Pōpōkī Subdivision. All but one of these lots lack adequate water source from the DWS system.

The second and third projects in the Maku'u Residential parcel are the Maku'u-Hālonā and Maku'u-Pōpōkī Residential Subdivisions consisting of approximately 540 acres. Both subdivisions are being planned concurrently. Phase 1 is approximately 240 acres in size with 374 residential and subsistence agriculture lots.

Phase 2 is approximately 300-acres in size with approximately 361 residential lots averaging 20,000 square feet and 13 agriculture lots ranging in size from 1.0 to 3.42 acres. A 12.7-acre parcel has been set aside for the development of a future park.

Site improvements for both subdivisions, include roadways, drainage system, water system, overhead electric and road lighting systems, and underground telecommunications systems.

The budget for the project, which will be funded by DHHL is estimated to be \$15.8 million for the complete build out of both subdivisions. The estimate would be refined during the final design process.



Maku'u Farm lots

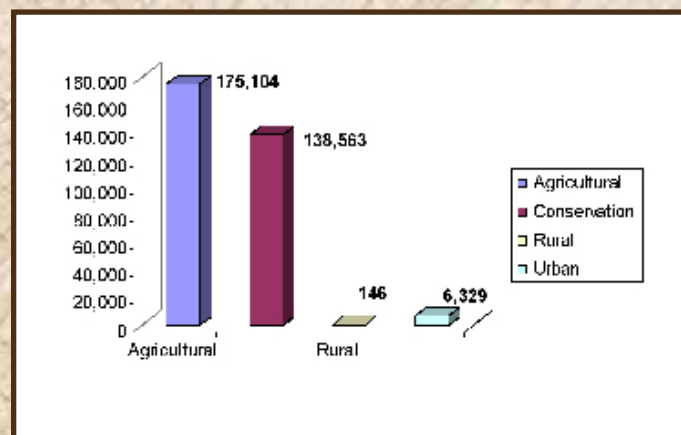




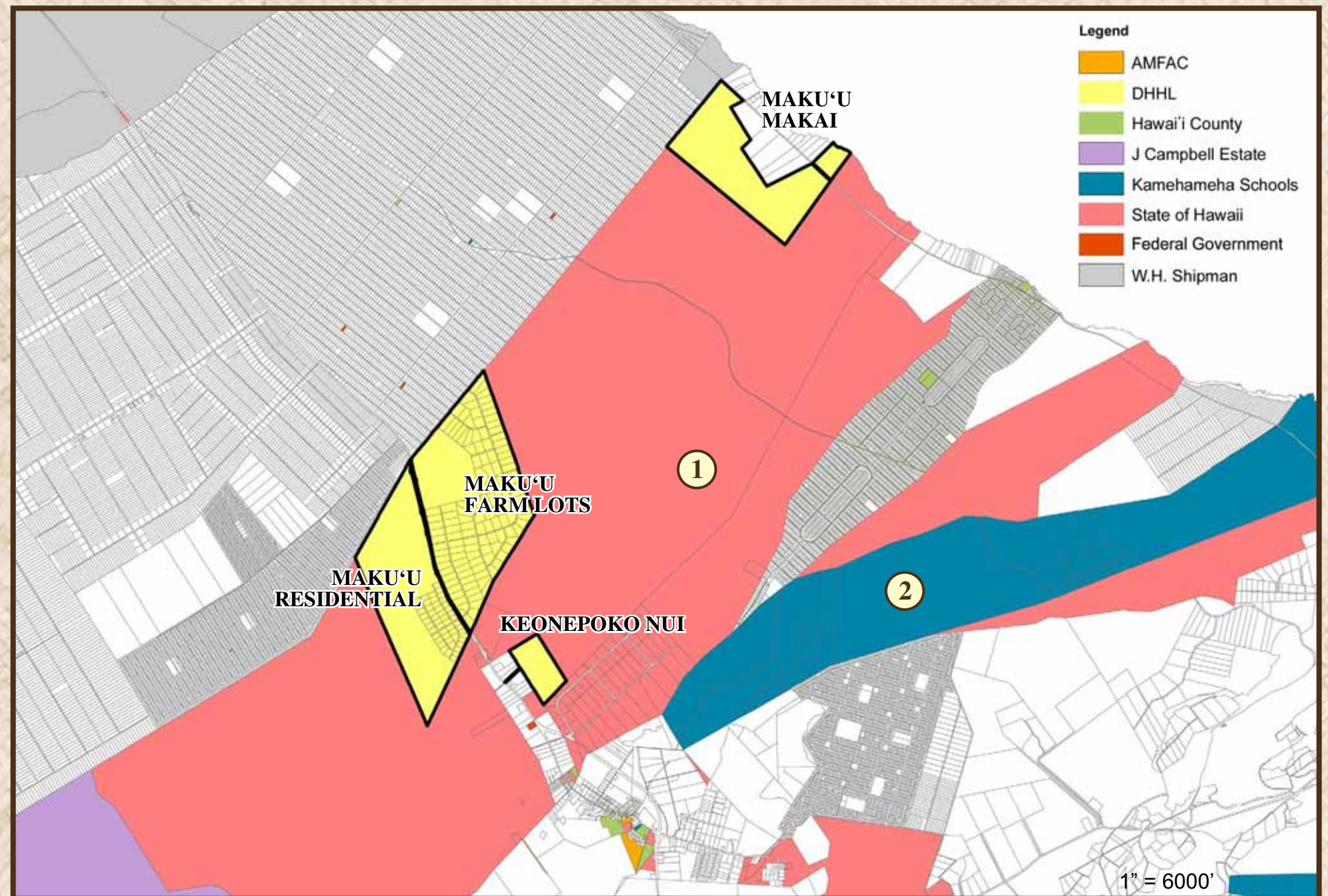
# Regional Map

## Adjacent Lands

- 1 STATE OF HAWAI'I**  
 State Department of Land and Natural Resources – Maku'u Lands –approximately 5,800 acres of State Land separate the Maku'u Makai and Maku'u Farm Lots parcels. These lands remain vacant. The lands are designated as Agricultural Lands under the current State Land Use and Orchards under the County of Hawai'i's LUPAG map. The 5,800 acres have no access to the Kea'au-Pāhoā Road and limited access to the existing Ala Hele O Puna Road along the coastline. There is also limited electric, water and sewer service to these lands. DLNR has no long range plans for these lands.
- 2 KAMEHAMEHA SCHOOLS**  
 Kamehameha Schools is the largest private landowner in the State of Hawai'i. Kamehameha Schools is a private, charitable, perpetual trust dedicated to the education of Hawaiian children and youth. Established in her will of 1883, the Kamehameha Schools is a legacy of Princess Bernice Pauahi Bishop, great-granddaughter and last direct royal descendant of King Kamehameha the Great. Income generated from numerous investments, and residential, commercial, and resort leases, fund the schools' maintenance and educational services.



Source: State of Hawai'i, DBEDT, Office of Planning GIS Data, County of Hawai'i Planning Department (May 2005)



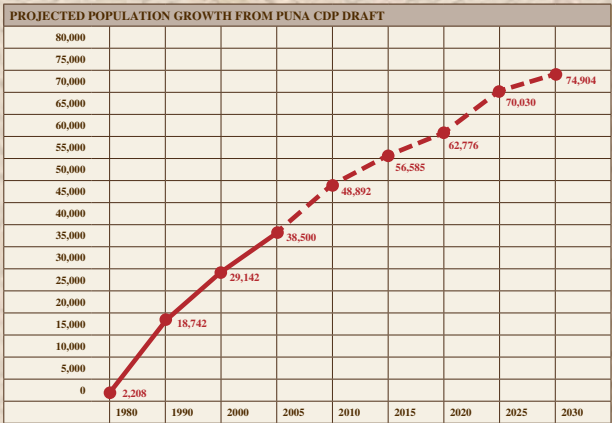


# Regional Demographics

- The Maku‘u Agriculture and Maku‘u Farm Lots are located on the windward side of the Big Island, within the Pāhoā-Kalapana Census County Division (CCD) as designated by the Federal Government and the Puna District as designated by the County of Hawai‘i.
- The 2000 census recorded the resident population of the Pāhoā-Kalapana CCD at 8,597 persons.
- The median age for CCD residents is 38.0, in Maku‘u it’s 33.5.
- The Pāhoā District has a normal native Hawaiian population (11.5 percent), compared to the rest of Hawai‘i County’s Native Hawaiian population (11.2 percent). Those with two or more races comprise the largest percentage (30.6 percent) of the Pāhoā population.
- According to the 2000 Census, the median household income is lower in the CCD at \$27,920, compared to the Big Island’s median household income of \$39,805. In Maku‘u it’s \$23,125.
- There are more residents living below the poverty level in the Maku‘u. The 2000 census recorded 30 percent of the residents living below the poverty level, compared to the rest of the county at 16 percent.
- At least 82.3 percent of the CCD population have received a high school degree or higher, in Maku‘u it’s 88%.
- The 2000 census recorded 3,714 housing units in the CCD, and 22 for Maku‘u.
- According to the Hawai‘i Information Service, the median sales price for a single family home in the CCD was \$260,000 in December 2007, compared to the median sales price for a single family home in the Big Island was \$395,000.
- Puna is primarily an agricultural district and there are approximately 198,747 acres zoned for agriculture as reported in the County of Hawai‘i General Plan. The major agricultural businesses include papaya, macadamia nuts, flowers, foliage, bananas, tropical fruits and vegetable production.
- The papaya and flower industries continue to experience moderate growth. The visitor industry has very little visible effect on the Puna district other than some roadside stands and a few visitor accommodations, such as bed and breakfast and vacation-rental operations.
- The Puna District is comprised of 320,142 acres.
- The Puna District will continue to experience relatively strong population growth due to the availability of relatively inexpensive lots that were created around the 1960s and as a result of employment opportunities in agriculture as well as job opportunities in Hilo.

Characteristics <sup>1</sup>	Maku‘u	Pāhoā-Kalapana CCD	County of Hawai‘i	State of Hawai‘i
POPULATION AND AGE				
Total population	59	8,597	148,677	1,211,537
Median age	33.5	38.0	38.6	36.2
Children under the age of 18	15 (25%)	2,475 (29%)	38,852 (26%)	295,767 (24%)
Population over 65	1 (2%)	995 (12%)	20,119 (14%)	160,601 (13%)
EDUCATIONAL ATTAINMENT				
% of population over 25 with high school diploma	88%	82.3%	84.6%	84.6%
% of population over 25 with bachelor’s degree	0%	10.1%	22.1%	26.2%
HOUSEHOLD				
Household size	3.28	2.76	2.75	2.92
Median income in 1999 dollars	\$23,125	\$27,920	\$38,805	\$59,586
Percent living below poverty level	30%	27%	16%	11%
Percent of households receiving public assistance	0%	2%	10%	7%
Percent of working residents traveling 30+ minutes to work	27%	51%	29%	38%
HOUSING MARKET				
Housing Units	22	3,714	62,674	460,542
Population per Housing Unit	2.68	2.31	2.37	2.63
Median Residential Price 2007 <sup>2</sup>		\$260,000	\$395,000	

<sup>1</sup>All data gathered from Census 2000 unless otherwise noted. <sup>2</sup>Hawai‘i County Board of Realtors 2006



GROWTH IN POPULATION BETWEEN THE 1990 & 2000 CENSUS	
Hawai‘i County	23.60%
Puna	50.80%
South Kohala	43.70%
North Kohala	40.70%
Kau	31.30%
North Kona	28.10%
South Kona	12.20%
North Hilo	11.60%
Hamakua	10.20%
South Hilo	6.20%





# Maku'u- Other Land Uses

## FAA Radio Tower Site

The FAA has been leasing acreage in Maku'u from DHHL since 1977 to operate beacons related to air traffic control. One beacon aids the FAA in aircraft surveillance while the other aids aircraft as they enter Hawaii Island airspace.

In 2003, DHHL withdrew 9.034 acres from the FAA's lease and granted a license to the Maku'u Farmers' Association for their farmer's market, proposed training facility, and community center. FAA foresees the need to maintain beacons on the site well into the future, but is working with the community to determine whether an additional 29 acres can be transferred back without interfering with operations.



## Maku'u Farmers' Development Plan

The Department has granted a license to the Maku'u Farmers' Association (MFA) to manage and operate activities on a 9.034 acre parcel and proposes to grant an additional 29-acre parcel in the southwest corner of the FAA property. Currently, the MFA operates a highly successful Farmers' Market providing community members the opportunity to sell their produce and goods. The current Farmers' Market site is situated on a portion of the nine-acre parcel and includes facilities for vendors, a permanent bathroom facility, and a cultural area for visiting tourists.

LAND USE PLAN PROGRAM	
Kupuna Housing	100 Units
Social Agency	29,374 SF
Retail / Commercial	29,374 SF
Comprehensive Health Center	63,950 SF
Child Care Center	9,068 SF
Overnight Quarters	296 Beds
Dining Hall	4,432 SF
Park	3.57 AC
Maintenance	6,000 SF
Community Center	19,800 SF
Mala	1.76 AC
Maku'u "Festival" Park / Farmers Market	4.58 AC





## PUNA COMMUNITY DEVELOPMENT PLAN (CDP)

The current Hawai'i County General Plan, approved in 2005 by the County Council, is the overall planning document for Hawai'i Island. The General Plan mandates districts within the County to plan for the future through implementation of Community Development Plans (CDPs). A Steering Committee, appointed by the Mayor and confirmed by the County Council, represents the Puna community and helps the Planning Department and CDP Consultants to identify and include the main stakeholders. At this time the Puna CDP is well underway since the district is seen to have the most pressing need for the CDP Process. *Source: Hawai'i Island Plan*

## PUNA CDP RECOMMENDATION FOR MEDICAL FACILITIES

As indicated in the Puna Survey report, healthcare is a major issue with Puna residents and the Public Service/Infrastructure Working Group within the Puna CDP recommends additional medical facilities in both lower and upper Puna. Similar to the Wai'anae Coast Comprehensive Health Center WCCHC on O'ahu, this facility will serve primarily low income, Native Hawaiian patient population with a mission to serve residents of the community regardless of their ability to pay for services. Puna has significant Native Hawaiian population. WCCHC facilities originated on Hawaiian Homelands property and they have noted DHHL as a substantial landholder in both upper and lower Puna that is not directly on highway #130. *Source: Hawai'i Island Plan*

## PUNA POLICE STATION

Planning, design, and construction of a new police station including refueling station and a radio tower to replace an existing inadequate facility. Funds being sought during this fiscal year will initiate the process in this project, providing for plans and design of the station. \$400,000 in appropriations has been designated for this project.

The Kea'au Police Station, which services the entire Puna District, is grossly inadequate in size and antiquated in construction. The building was first constructed in 1969, and expanded to its present size in 1986. At the time expansion was completed, it housed thirty-three (33) sworn personnel and one clerical position, and even then, conditions were cramped. Since then, the manpower for the Kea'au Police station has increased to fifty-three (53) sworn personnel and two civilian positions. In any event, the size of the facility must be sufficient to house a command which is projected to include seventy (70) sworn personnel and four (4) civilian employees. *Source: County of Hawai'i Capital Budget and Six Year Capital Improvements Program 2007-2008.*

## 1 PĀHOA HIGH & INTERMEDIATE SCHOOLS

The Department of Education has designated \$3,000,000 in Special Funds for the construction of a new gymnasium, ground and site improvements, equipment and appurtenances in the 2007 State budget.

## KEA'AU PUBLIC LIBRARY

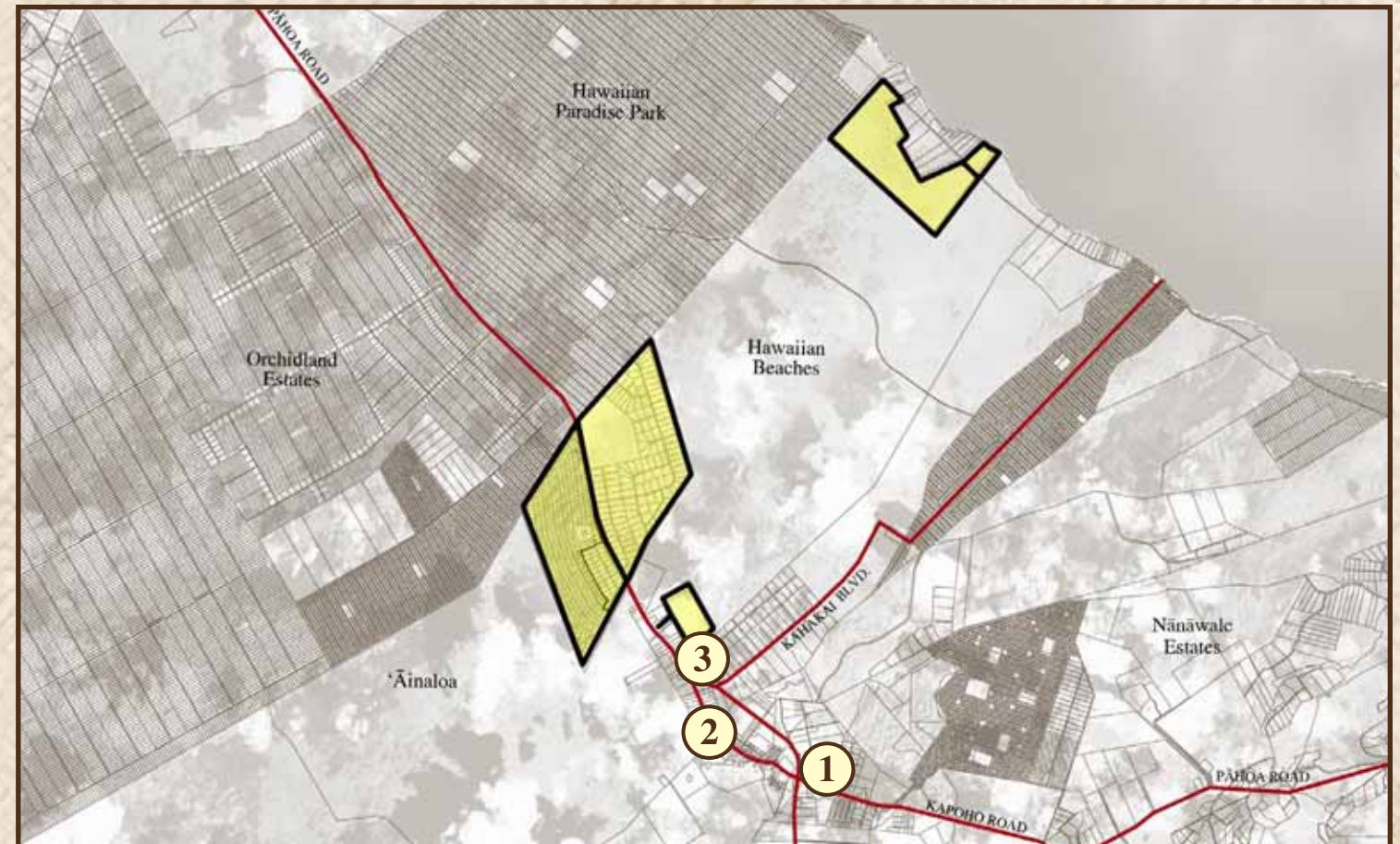
The Department of Accounting and General Services has designated \$3,000,000 in General Obligation Bond Funds for the plans, land acquisition, and design for a new public library in Kea'au District according to the 2007 State budget. *Source: State of Hawai'i 2007-2009 State Budget*

## 2 COUNTY OF HAWAI'I PĀHOA FIRE STATION

The new 8,000 square foot Pāhoa Fire Station is expected to be completed in mid-2008 and will replace the one located off of Old Government Road in Pāhoa. The new fire station will be located on a 19-acre parcel on the makai side of Highway 130 and will feature living quarters, classrooms and an equipment-storage area complete with a workshop and possibly the addition of a water tanker in the future.

## COUNTY OF HAWAI'I ADDITIONAL PARKS AT HONOLULU LANDING, WAI'ELE, & CAPE KUMUKAHI

Puna's Councilwoman Emily Naeole is proposing for the County to purchase 334 acres of Honolulu Landing, 51.7 acres of Wai'elee, and roughly seven acres of Cape Kumukahi to provide Puna residents with additional parks. All three areas are listed by the Public Access, Open Space, and Natural Preservation Commission as lands that the County should purchase. A better road is needed leading to Cape Kumukahi's 1,200 acres of lava fields making up the beach front property where people fish, snorkel and swim.



## 3 PĀHOA POLICE STATION

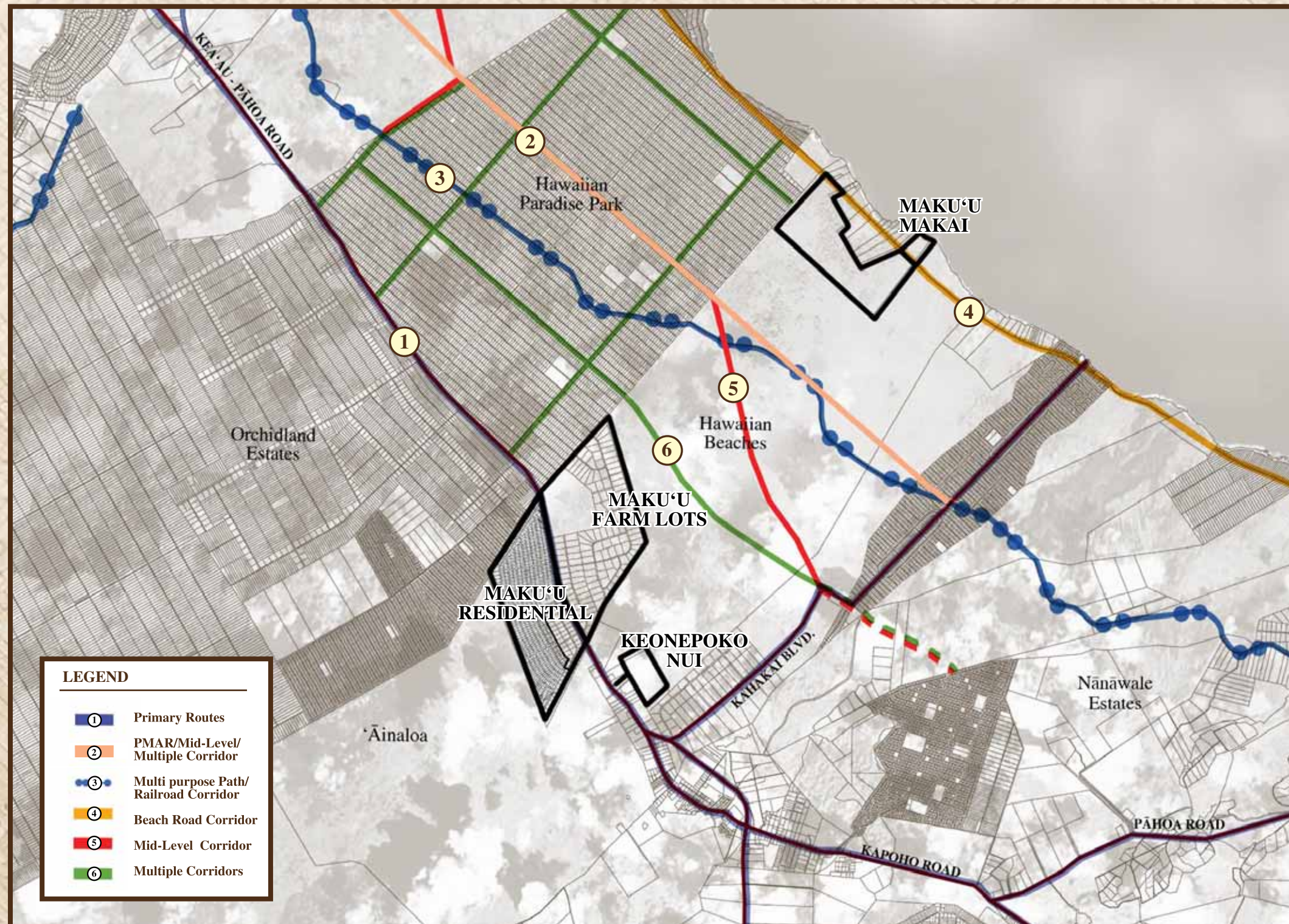
Planning, design, and construction of a new Police Sub-Station in Pāhoa, to include a radio tower is in the process of being completed. Funds being sought during this fiscal year will initiate the process for construction. Increase in appropriation due to cost estimates from consulting completing design of facility. \$3,800,000 in appropriations has been designated for this project.

Currently personnel assigned to the Kea'au Police Station provide services to the communities in the lower Puna district and the officers patrolling this area utilize a facility constructed in Pāhoa town. The current facility is inadequate in size and provides no room for expansion; not to mention being located in an area off of the main thoroughfare (Highway 130) that is utilized by a majority of the community and visitors. Construction of a new facility at the site being developed for construction of a Fire Station would place Public Safety services in a centralized area that is highly visible and accessible to the public.

*Source: County of Hawai'i Capital Budget and Six Year Capital Improvements Program 2007-2008.*



# Infrastructure - Roads





## Roads

### 1 PRIMARY ROUTES

Primary routes within the Puna district are the Volcano Road (Highway 11), which provides access to Hilo and serves the upper Puna region; the Puna Road (Highway 130), serving lower Puna from Kea‘au to Kalapana-Kaimū; the Kapoho Road (Highway 132), from Pāhoa to Kapoho; and the Puna Coast Road (Highway 137), linking Kapoho and Kalapana-Kaimū. The latter road is basically a narrow, paved cinder road. Recent upgrades have greatly improved Highway 130 from Kea‘au to Kalapana and Highway 11 from Hilo to Volcano. However, the majority of the roads throughout the district are inadequate by present standards. As the only two primary routes serving the district, Highway 130 and Highway 11 are congested during the work week for Hilo-bound traffic as the population in the district continues to grow. The recently completed Keaau By-Pass Highway re-directs Hilo- and Pāhoa-bound traffic around the town of Keaau, avoiding the congested intersection of Volcano Highway- Kea‘au-Pāhoa Road.

Many sections of the roads in this district have drainage systems that do not meet present standards or have sharp curves and grades without adequate sight distance. In several communities, buildings directly abut or encroach onto rights-of-way. Most private roads in large subdivisions are cinder-surfaced and deficient in layout and construction. During the development of these large, substandard subdivisions in the 1950s and 1960s, limited attention was given to proper roadway base construction and drainage. There is also a network of private old plantation roads throughout the area. *Source: Puna Regional Circulation Plan Nov.2005*

The Puna Regional Circulation Plan proposes an alternate route from Hilo to Puna Makai. The alternate route concept was previously identified in several plans including the Hawai‘i County General Plan (2005), the Hawai‘i Long Range Transportation Plan (1998), the Puna Community Development Plan (1995), and an Environmental Impact Statement for Beach Road (1972).

This Plan proposes the implementation of a Puna Makai Alternate Route (PMAR) concept. However, it identifies alternate routes to Highway 130 (Kea‘au-Pāhoa Road) including several alternative alignments from Hilo to Hawaiian Paradise Park, Hawaiian Beaches, and/or Nānāwale.

### 2 PMAR/MID-LEVEL / MULTIPLE CORRIDORS

(source: Puna CDP Transportation: New Alternative Corridors)

The purpose of the proposed Puna Parkway is to connect South Hilo and the Puna Community, reduce the congestion through Puna, and relieve congestion on Kea‘au-Pāhoa Road. The parkway proposed here is a lower speed, scenic route which would provide Puna with an emergency evacuation route, less traffic congestion, and would further the goals of passenger safety, sustainability and lower dependence on fossil fuels. From the Hawaiian Beaches Subdivision heading north, the project is a mid-level roadway located makai of Highway 130. It starts from Kahakai Blvd, parallel to Kea‘au-Pāhoa road and extends through Hawaiian Paradise Park Subdivision with an eventual connection to Railroad Avenue in South Hilo.

### 3 MULTIPURPOSE PATH / RAILROAD CORRIDOR

The old Railroad Right-of-Way alignment was considered as an alternate route. According to County TMK maps, the right-of-way ranges from 20 to 40 feet wide and is owned by several landowners. This corridor is not acceptable for regular vehicular transportation. The railroad right-of-way is best used as a pathway for non-motorized public use, with the exception of maintaining present access to area farmers and other lessees. Nevertheless, the rail road corridor could also be used as an interim emergency access route. Although high densities of traffic could not be accommodated, the route would provide one alternative for residents in an emergency evacuation situation. The route alignment from Hilo to Shower Drive could serve as a feasible bypass.

### 4 BEACH ROAD CORRIDOR:

Many believe the coastal views would provide a scenic highway highly desirable for visitors. In 1972, an EIS was conducted evaluating an oceanfront scenic road. Major difficulties exist with this option because of hazard zones. Most of the Beach Road is within the tsunami inundation area and several sections are in the lava hazard zones. The location of the alignment through such areas would preclude Federal highway funding for the project. However, the Beach Road has the potential to qualify for designation as a Scenic Byway due to its historic quality. The route would nevertheless fail to provide emergency access during high surf or flooding conditions. According to Hawaiian Paradise Park residents, several subdivision roads near the shore have been closed due to erosion under cliffs. They believe a PMAR route must be located above the elevation of 7th Avenue. For these reasons, the Beach Road was also removed from consideration.

### 5 MID-LEVEL CORRIDOR

A new mid-level corridor would provide service to Puna Makai residents. The design of a new transportation corridor halfway between Highway 130 and the coastline would provide access for a variety of residents. This corridor is also away from major hazard zones. The PMAR mid-level corridor can be broken up into four sections. The need for implementing each section will have to be considered. There are several alternative alignments for each section of a mid-level corridor. Mid-level alignments include: Hilo to Hawaiian Paradise Park (HPP) (Hilo International Airport to Shower Dr, or Railroad Avenue to Shower Drive, and Shower Dr. Extension). Through Hawaiian Paradise Park (Shower Dr. to Maku‘u Dr.), Hawaiian Paradise Park to Hawaiian Beaches (Maku‘u Dr. to Kahakai Blvd. or Maku‘u Dr. to Kahakai Blvd). Hawaiian Beaches to Nānāwale (Kahakai Blvd. to Kehau St.)

If the PMAR is intended to primarily serve Hawaiian Paradise Park, the route could connect to Kaloli Drive. Residents would use existing roads to access the alternate route. Travelers would cross on all numbered streets without any one being preferred, thus distributing traffic. The alignment at the back of parcels on 15th and 16th Avenues would continue from Kaloli Drive to Maku‘u Drive. If the PMAR should continue towards Hawaiian Beaches, a main route will be needed through Hawaiian Paradise Park from Kaloli. The PMAR would continue from Maku‘u Drive to Kahakai Boulevard in Hawaiian Beaches. The alternate route could take a mid-level alignment into the middle of the subdivision (3A). This alignment would be most central to residents. An alignment that instead extends up towards Keonepoko School also has the merit of serving the trip generator (3B). This alternative would serve the school and also provide options for future connections to Nānāwale. The alignment could continue to the Nānāwale subdivision from Kahakai Boulevard to Kehau Street. This alignment would avoid the State Forest Reserve and would connect to an existing County street at Kehau.

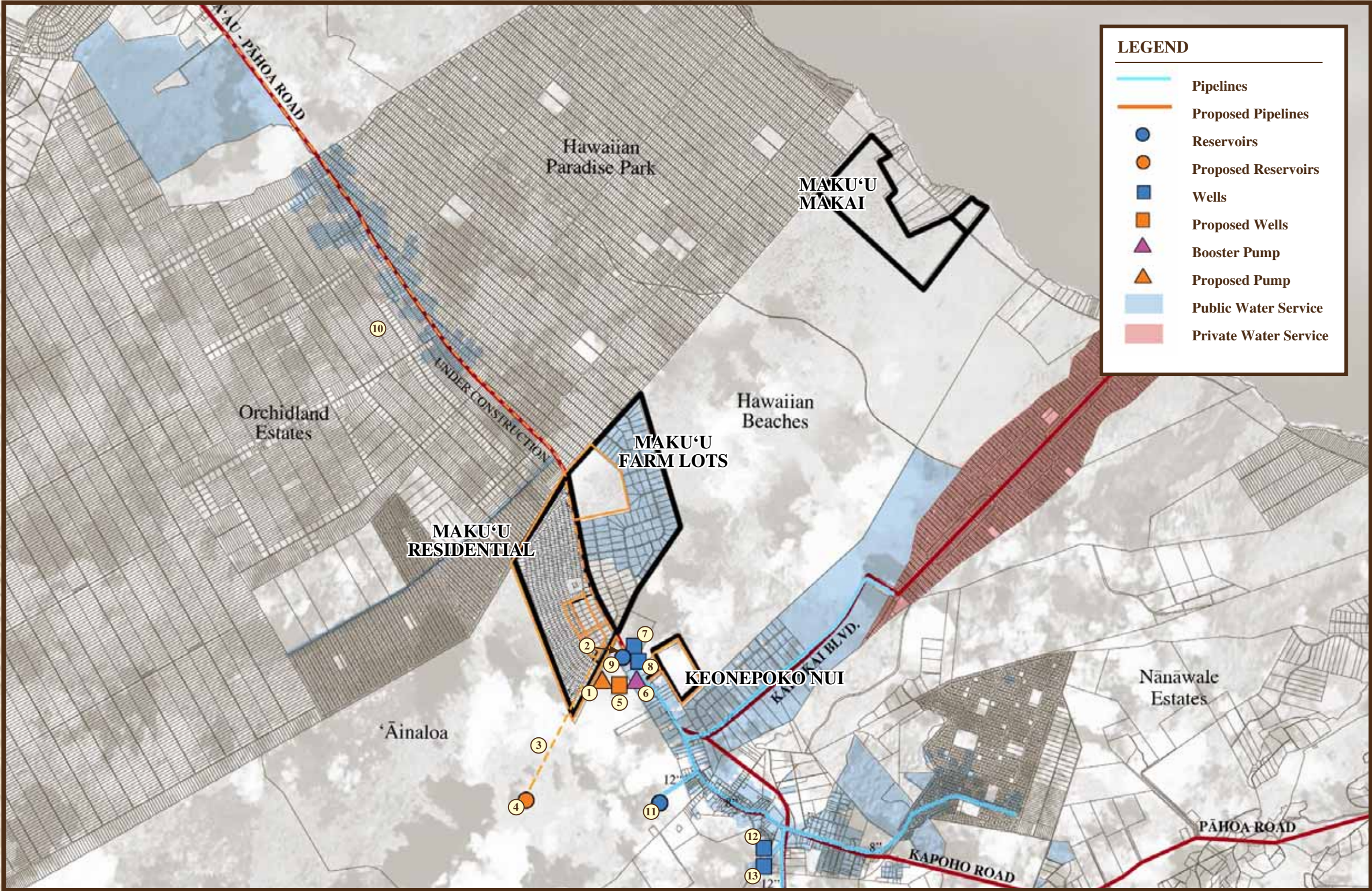
### 6 MULTIPLE CORRIDORS

Instead of developing a single PMAR corridor, this alternative considers development of several connections that would distribute traffic congestion more evenly. Two alignments could travel from Hilo to Hawaiian Paradise Park. A makai route from Hilo Airport could connect to the existing 5th Avenue in HPP. Similarly, a mid-level route could connect the existing Railroad Avenue to 15th Avenue in HPP. Shower Drive could be extended to meet this route. Only limited improvements to existing streets would be required. Condemnation of private property would be limited or unnecessary with this option. Each route could continue on to Kahakai Boulevard in Hawaiian Beaches.





# Infrastructure - Water (Existing Water Map)





## LEGEND

- ① **Proposed Pump Station To Lift Water From The Well Site To A New Reservoir.**
- ② **Existing Transmission Line From Pump Station To The Subdivision**
- ③ **Proposed Transmission Line From Subdivision To The Reservoir.**
- ④ **Proposed Reservoir Above Maku'u-2**
- ⑤ **Proposed Well At Keonepoko Nui**
- ⑥ **Existing Booster Pump 350gpm**
- ⑦ **Existing Keonepoko Nui Well 1 3188-01**
- ⑧ **Existing Keonepoko Nui Well 2 3188-02 (DHHL Constructed)**
- ⑨ **Existing 0.5 Mg Reservoir At Keonepoko Nui Well Site**
- ⑩ **Proposed Transmission Line On Kea'au-Pāhoa Highway**
- ⑪ **Existing Pāhoa Reservoir**
- ⑫ **Existing Pāhoa Batt Well 2a 2986-01**
- ⑩ **Existing Pāhoa Batt Well 2b 2968-02**

*Source: Special Report #2: Water Resources Island of Hawai'i (April 2002) and DHHL Pu'ukapu Pasture Lots Water Strategy (May 2002).*

## Existing Water System

(Source: Special Report #2 –Water Resources) The DWS Pāhoa Water System supplies potable water to Pāhoa Village, Pāhoa Agricultural Park, and Keonepoko Elementary areas. It also extends west along the Kea'au-Pāhoa Highway to Keonepoko well site. Upon completion of the now under construction transmission line on the Kea'au-Pāhoa highway, the Pāhoa System would service the Maku'u-Keonepoko tracts. The Kaluahine Street access to the Maku'u Subdivision is about 3,000 feet from the Keonepoko well site.

The Pāhoa System pumps ground water from two well sites for its supply. The pump capacity of the two wells at the Pāhoa School site is 0.864 mgd. The pump capacity of the two wells at the Keonepoko Nui Site is 2.016 mgd, including the DHHL constructed Keonepoko Well 2.

The Kea'au to Pāhoa transmission main allows water from the Keonepoko reservoir or Kea'au to supply part of the lots of the Maku'u Farm and Agricultural Lots Subdivision. However, water supply is not available to 78 of 177 lots in the Unit 1 of Maku'u Farm and Agricultural Lots from the Keonepoko reservoir. Upon completion of the proposed 1.0 MG reservoir above Maku'u 2, the remaining lots in Unit 1, and other lots in the proposed land use sections of Maku'u can have water service.

*Source: Special Report #2 - Water Resources*

Currently, there are four major water systems in the Puna district: 'Ōla'a-Mt. View, Pāhoa, Kapoho, and Kalapana. The total average consumption of these systems is 1.2 mgd.

The Pāhoa water system, located in the geographic center of the lower Puna region, extends from Keonepoko Homesteads down along portions of the Kapoho and Pohoiki Roads to Kapoho. The present average consumption is 0.40 mgd.

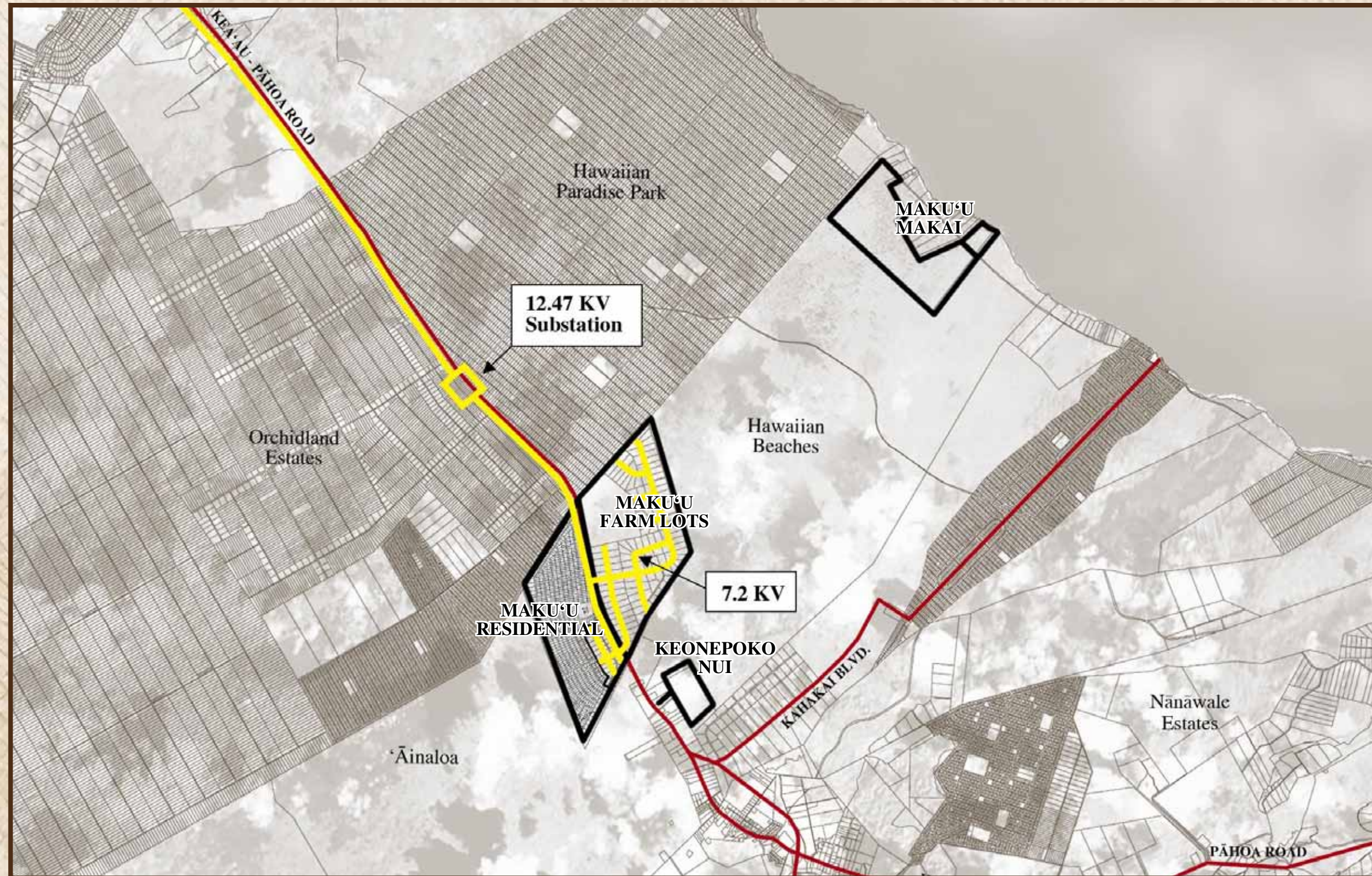
The Hawaiian Beaches subdivision located in Waiakahi'ula is served by a privately owned water system. The developer had constructed this non-dedicable system.

The Glenwood and Volcano areas are presently not serviced by any public water system. Many of these areas still depend on roof catchment systems.

*Source: 2005 Hawai'i County General Plan*



# Infrastructure - Utilities





# *Infrastructure - Utilities*

## *Electrical Service*

The Hawai'i Electric Light Company, Inc. (HELCO), supplies electricity for the County. HELCO purchases a total of 112 megawatts of firm power from three privately-owned companies Hilo Coast Power Company (coal at 22 megawatts), Hamakua Energy Partners (60 megawatts) and Puna Geothermal Venture (geothermal at 30 megawatts). These power plants are located at Keahole, North Kona; Waimea, South Kohala; Waiākea Peninsula and Kanoelehua, South Hilo; and Kea'au, Puna. HELCO owns four hydroelectric units and a wind farm that provide energy to the system.

There are two levels of transmission voltages to transfer power between areas on the Big Island. The main transmission voltage is 69kV. HELCO has four 69kV cross-island transmission lines. One line is the southern line connecting the Kanoelehua substation to West Hawai'i via the Keālia substation along Highway 11 through the Puna and Ka'ū Districts. The other transmission voltage is 13.8kV that includes three tie-lines in Hilo connecting the Shipman and Kanoelehua power plants. HELCO uses 34.5kV as a sub-transmission voltage and three lines are used to service the Puna, Ka'u and North Kohala areas. The existing distribution system consists of several different voltage levels: 2.4kV, 4.16kV, 7.2kV, 12.47kV and 13.8kV. Distribution substations, which transform voltages to distribution voltages, are also located island-wide in proximity to communities and other developments.

The Maku'u Farm and Agriculture lots is supported by a 12.47 kV distribution substation located in the Hawaiian Paradise Park Subdivision. The electrical lines within the Maku'u Farm and Agriculture lots are single-phase, 7.2 kV voltage levels; however there are no electrical lines past parcel 11, therefore likely supported by generators.

## *Gas*

Propane gas is widely used in residential and commercial facilities on the island of Hawai'i. In some rural areas of the County, gas is the only source of the power. The Public Utilities Commission (PUC) regulates 67 miles of gas mains and service lines on the Big Island. Most of these lines are located in Hilo. Gas service is also provided by tank or cylinder. This type of service is not regulated by the Public Utilities Commission.

## *Telephone Service*

Sandwich Isles Communication will provide fiber optic telephone service to DHHL's lands.

## *Cable Television Service*

The Puna District is within the Oceanic Time Warner Cable service area.

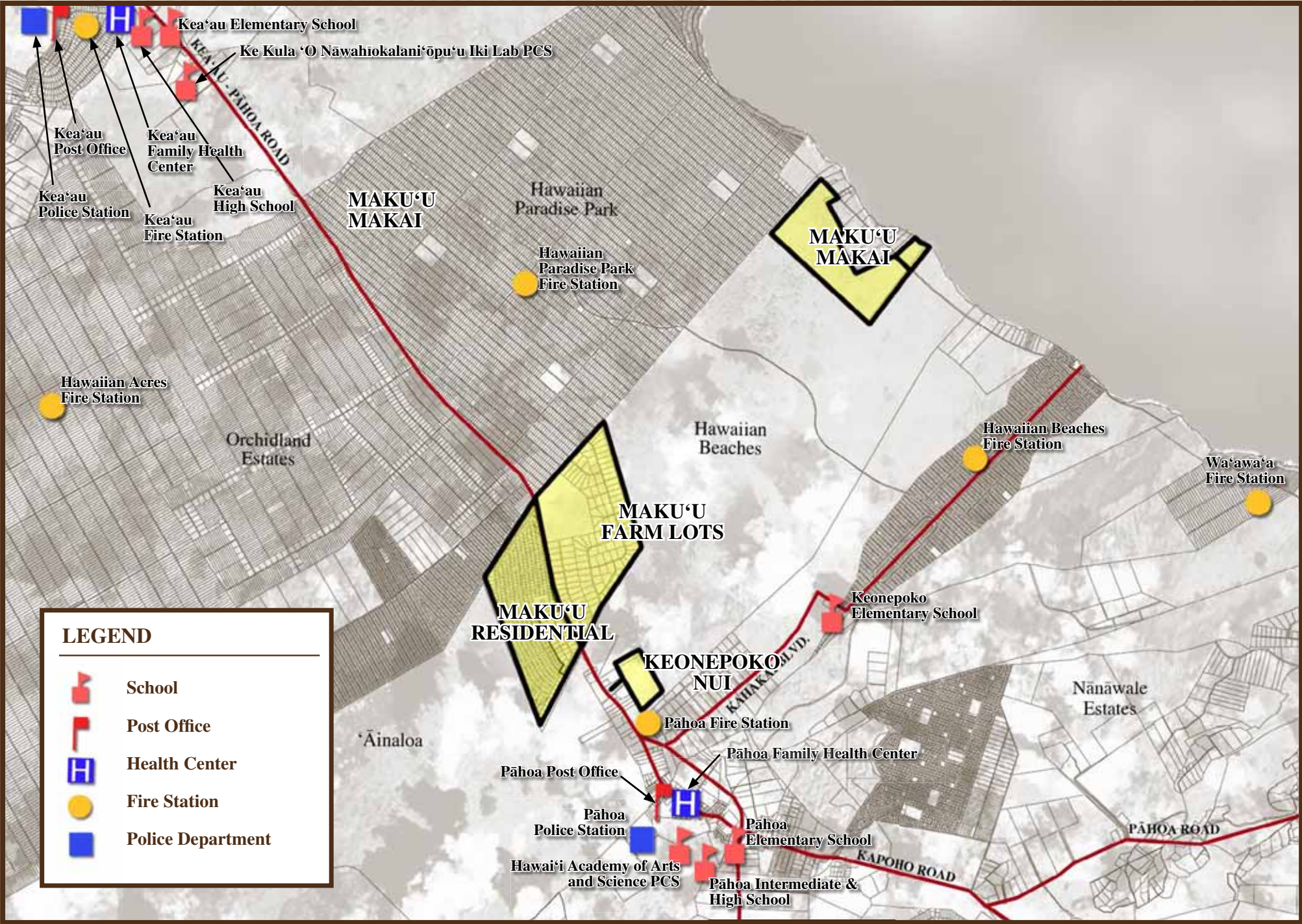
## *Existing Sewer System*

At present, most residents in the Puna district are served by individual sewerage systems. The use of cesspools and individual household aerobic treatment units will probably be continued until such time as increased population distribution and densities make it economically feasible to install municipal sewerage systems. Residences near the coastal areas are much more vulnerable to unsatisfactory results with individual disposal systems due to the influence of tidal surges on the ground water table. The close proximity of the groundwater table reduces the efficiency of individual disposal systems because there is less filtration that can occur before the effluent reaches the ground water. This reduced efficiency may also affect the quality of near shore waters due to the reduced filtration.





# Regional Services - Public Facilities



*Q: Are there any future developments for a new Pāhoa gym?*

A: The future plan for a new County Parks & Recreation gym is to have it located on the same parcel that has been Executive Ordered to the County by the State. The new Pāhoa Fire Station and Police Station will be at the same location. Conceptual plans also include ball fields, a pavilion, and comfort station. The Department of Education also has plans and State funding for a new Pāhoa gym next to the school.

*Q: Does Puna have a youth recreational center or plan to have one?*

A: The County recognizes the deficiency of recreational facilities in the Puna district. Accordingly, the County is in the process of initiating a master planning effort to create a community center complex in Pāhoa on County owned land that includes the existing pool, ball field, and old fire station. The community and interested community organizations will be involved in the planning effort such as the Boys and Girls Club, YMCA, Bay Clinic, Friends of the Library, Mainstreet Pāhoa, to name a few. The intention is to create a multi-purpose community complex to serve not only youth recreational but also cultural and social service needs.





# Regional Services - Public Facilities

## Schools

	Private / Public	Grades	Actual Enrollment 2007-2008	Projected Enrollment 2012-2013	Student / Teacher Ratio
<b>Kea‘au School Complex</b>					
Mt. View Elementary School	Public	Pre K-5	470	452	17:1
Kea‘au Elementary School	Public	Pre K-5	750	786	17:1
Kea‘au Middle School	Public	6-8	603	647	16:1
Kea‘au High School	Public	9-12	970	999	15:1
<b>Pāhoa School Complex</b>					
Keonepoko Elementary School	Public	Pre K-6	654	660	17:1
Pāhoa Elementary School	Public	Pre K-6	361	363	18:1
Pāhoa High & Intermediate School	Public	7-12	766	656	14:1
<b>Private / Charter Schools</b>					
Kamehameha Schools Hawai‘i Campus	Private	Pre K-12	1,120	N/A	13:1
Montessori Country School	Private	Pre K-12	49	N/A	16:1

The public school complexes in the Puna District include the Kea‘au School Complex and Pāhoa School Complex. The Kea‘au School complex includes Kea‘au High School, Kea‘au Middle School, Kea‘au Elementary School, and Mt. View Elementary School. The Pāhoa School Complex includes Pāhoa High and Intermediate School, Pāhoa Elementary School, and Keonepoko Elementary School. The Pāhoa Complex continues to experience increased pressure on its educational facilities due to population growth and an influx of people moving into the subdivisions in the area. Several private schools located in Kea‘au include Kamehameha Schools Hawai‘i Campus, Montessori Country School, Christian Liberty School and Mālama Waldorf School.

The Kea‘au, Mt. View and Pāhoa branch libraries are joint community-school facilities. The Kea‘au facility has a collection of 21,332 volumes. The facilities located at Pāhoa and Mt. View house 34, 365 and 18,345 volumes, respectively. The size of the Pāhoa and Mt. View facilities are inadequate to meet the student and community needs. Insufficient adequate pedestrian access and parking at these facilities continue to be an ongoing problem.

## Higher Education

University / College	Private / Public	Level	Actual Enrollment 2007-2008
University of Hawai‘i, Hilo	Public	University	3,608**
Hawai‘i Community College	Public	2-Year College	2,551**

The University of Hawai‘i System has two campuses within proximity of Maku‘u servicing the higher education needs of East Hawai‘i: The University of Hawai‘i at Hilo, and Hawai‘i Community College.

The University of Hawai‘i at Hilo offers baccalaureate degrees through an arts and sciences curriculum. Although it emphasizes education in the liberal arts tradition, it also offers advanced degrees in indigenous languages and natural sciences. The campus also hosts the only accredited pharmacy school in the state. The institution is also home base to many of the astronomy consortiums operating on Mauna Kea (18 miles away by car).

Hawai‘i Community College focuses on providing access to those seeking a higher education. The college’s curriculum centers around cultural competency, environment, Hawaiian culture and values, and workforce development. The college also offers the only known degree program in the ancient art of Hula (18 miles away by car).

## Fire / Emt Services

The Hawai‘i County Fire Department has 20 regular fire stations and 22 volunteer fire stations. Pāhoa has a fire/EMS operation that serves the Pāhoa-Paradise Park and Kalapana-Kapoho areas. Kea‘au has a 24-hour fire/EMS facility. Hawaiian Beaches, Hawaiian Paradise Parks, Hawaiian Acres, Fern Acres, Fern Forest and Wa‘a Wa‘a subdivisions have 24-hour volunteer facilities.

## Police Facilities

The Hawai‘i County Police Department is in charge of enforcing all Federal, State, and local laws in Hawai‘i County, the State’s largest county in terms of land mass. Hawai‘i County has a main police station in each of its eight districts. The main police station for the entire Puna district is located in the Kea‘au public office complex which also houses fire and courtroom services. The Puna district’s police substation is located in Pāhoa. Based on population, the average is about 2.5 officers per 1,000 residents islandwide. The Puna district is significantly below this average with only 1.56 officers per 1,000 residents. There are two correctional facilities located in East Hawai‘i: Hawai‘i Community Correctional Facility in Hilo and Kulani Correctional Facility.

## Medical Care

There are currently no comprehensive medical facilities within immediate vicinity of Maku‘u. Two medical centers are within sixty miles of the area by car.

### HILO MEDICAL CENTER (21 miles distance by car)

A 264-bed facility, Hilo Medical Center is the largest acute care facility in Hawai‘i County. The center offers 24-hour emergency care, surgical care, and a variety of other out-patient services. With over 900 employees, the medical is one of the island’s largest employers and part of the state-administered Hawai‘i Health Systems Corporation.

### KA‘U HOSPITAL (57 miles distance by car)

Located in Pahala, Ka‘u Hospital and Rural Health Clinic is a 21-bed critical access hospital providing both acute and long term care including 24-hour emergency services and a Family Practice medical clinic. The hospital is also part of the Hawai‘i Health Systems Corporation.

## National Park

### HAWAI‘I VOLCANOES NATIONAL PARK (32 miles distance by car)

Hawai‘i Volcanoes National Park was established through an Act of Congress in 1916. The park is the island’s most visited attraction, with over 2.6 million visitors passing through the park gates annually. The park encompasses 333,000 acres and includes the state’s two active volcanoes: Kilauea and Mauna Loa. The park is a full service recreational facility of the National Park Service, including lodging, concessions, interactive visitor centers, and numerous trails.

\*\* Numbers accurate at time of press.





# Potential Projects

## \* 1. Maku‘u Association Community Center

Over the past eight years, the Maku‘u Farmers’ Association has refined and developed plans to construct a community center on a parcel of land currently licensed to them by the Department of Hawaiian Home Lands. The Community Center vision includes; a permanent site for the Farmers’ Market, a “Festival Park”, Kāpuna Housing, a Visitor Center with overnight quarters, a Child Care Center with “Tot Lot”, play fields, a Social Agency Center, commercial retail spaces, and a comprehensive Health Center to serve the greater Puna region.

### A. COMPREHENSIVE HEALTH CENTER FEASIBILITY STUDY

Puna residents have consistently expressed their concerns regarding the absence of adequate emergency health coverage within their immediate proximity. The closest acute care facility is in Hilo, approximately thirty minutes away. Residents envision the development of a comprehensive health facility similar to the Wai‘anae Coast Comprehensive Health Center. The first step towards development would entail the commencement of a feasibility study investigating Puna’s ability to financially support a center, and what types of services could be provided.

### B. KŪPUNA HOUSING

As area residents age gracefully, they require greater assistance at home, and more social services. Those in Maku‘u see it their kuleana to care for their kūpuna in the best way possible. They would like to construct a community for their elders where they can receive appropriate living assistance, while allowing them to maintain their independence. Similar projects have worked on O‘ahu including Olaloa in Mililani and One Kalakaua in Downtown Honolulu.

## \* 2. Maku‘u Off-site Water System, Phase 2

The water system currently servicing the Maku‘u Farm subdivision does not service 78 lots due to low water pressure. These facilities currently provide water to only those lots below the 523-foot elevation. Those 78 farm lots above the service elevation, the proposed Maku‘u Mauka subdivision, and a planned community center currently lack potable water service. Construction of a new well, storage and delivery infrastructure would expand service to these areas. This project aims to provide dependable water service to these DHHL lots in Maku‘u.

## \* 3. Road Improvements

### A. WIDENING OF KEA‘AU-PĀHOA ROAD

Many residents make the daily commute in and out of Hilo for work, placing traffic pressure on the only highway in and out of the area. Many tourists also travel the road to see the black sand beaches created by Kīlauea’s latest flow to enter the area in the late 1980’s to early 1990’s. However, additional tourist traffic results during times when lava enters the ocean near the Kalapana area. The combination of high tourist traffic and Hilo commuters can make an already long commute out of Puna even longer. Widening of the highway is required to accommodate the additional traffic and make the commute safer for drivers. However, widening could be delayed due to less federal highway funding as a result of the Iraq war.

### B. INTERSECTION IMPROVEMENTS NEAR MAKU‘U FARMERS’ MARKET

The Maku‘u Farmers’ Market depends heavily on drive-by traffic for its business. However, heavy travel along the highway makes it difficult to access the site by either a left turn from the east-bound lane, or to slow down in the west-bound direction to make a right. Vehicular entry and exist has now created a significant safety hazard to motorists, and requires intersection improvements. Urgency in executing the project remains as the funds appropriated by the legislature will lapse at the end of this fiscal year.





## \*4. Maku‘u Community Markers

Residents have expressed its desire to create a more discrete neighborhood boundary to help facilitate kinship and common identity between area residents, while galvanizing support behind community efforts. A potential project facilitating the growth of a common community identity and camaraderie between residents could entail the erection of community markers along Kea‘au-Pāhoa Road announcing entry and exit into Maku‘u.

## 5. Farm Plans & Capacity Building

Successful cultivation of lots starts at the development of a farm plan. However, many of the lots awarded in Maku‘u remain unused because many lack the requisite knowledge to successfully initiate and maintain an agriculture-based enterprise. The original farm development plans drafted as part of the initial lease execution are cursory, absent professional guidance, and in many cases, practically unfeasible. A proposal would initiate capacity building programs in Maku‘u, allowing lessees an opportunity to create realistic farm plans and implement them

## 6. Enforcement of Lease Provisions

Although DHHL awarded the majority of available parcels within the Maku‘u Farm Lots subdivision in the mid-1980’s, only a handful of lots have actually undergone development. Current residents and active farmers would like to see more of a human presence within their subdivision to help grow a greater sense of community while creating a neighborhood with many “eyes” ultimately deterring crime.

## 7. Design Guidelines

For issues related to both safety and aesthetics, the residents of Maku‘u would like DHHL or the department to develop building codes, subdivision standards and design guidelines. These guidelines would address many concerns related to habitability, and create community pride by requiring lessees to maintain and upkeep the structures they inhabit. The standards should also take into account the finances of beneficiaries, allowing compliance without requiring exorbitant costs.

## 8. Native Hawaiian Homeless Shelter

The plight of the homeless is not isolated to the shorelines of O‘ahu. Rather, the rapid increase in the amount of homeless individuals and families over recent years is evident statewide. The residents of Maku‘u have indicated their desire to assist the Native Hawaiian homeless population of Puna by providing them shelter. This project would entail the acquisition of a site, capital campaign and construction of a shelter.

\* Priority Project

NOTE: Some projects listed may be incorporated into a larger project.



# *Priority Project #1 - Maku‘u Farmers’ Association Community Center*

## *Background*

The Maku‘u Farmers’ Association (MFA) currently operates a successful weekly farmer’s market on 9 acres of land on the Kea‘au-Pāhoa Road at Maku‘u. This grassroots initiative first started with 2 acres and with its successful farmer’s market, is now planning to expand their land area to 38 acres. The farmers have worked for many years to develop a vision and a plan to address the needs of Hawaiian Home Lands beneficiaries in Maku‘u, as well as the needs of the larger Puna community.

The vision for a community center at Maku‘u includes: a permanent site for the Farmers’ Market, a “Festival Park,” Kūpuna Housing, a visitor center with overnight quarters, a child care center with “Tot Lot,” playfields, a social agency center, commercial/retail space, and a comprehensive health center to serve the greater Puna region. The conceptual land use design for the community center (see diagram) illustrates how the different elements interrelate programmatically and spatially on the land.

This ambitious project will require more detailed planning and design work, spanning many years of implementation. Land Use designations would need to be appropriate to the proposed land uses. Other environmental requirements would also need to be secured before any construction could take place. Most importantly, due to the critical function of adjacent FAA tower, all proposed land uses in areas outside of the existing 9-acre parcel would require the approval of FAA before construction.

The Priority Project for the Community Center includes five critical elements that should be implemented within 1 to 3 years:

1. Develop Maku‘u Community Center Plan (MFA)
2. Designate land use zoning to ensure county zoning compliance (DHHL)
3. FAA detailed review and approval of proposed land uses (FAA)
4. Execute changes to MFA and FAA land use licenses (DHHL)
5. Secure funding for planning, design, and construction (MFA, DHHL)

## *Schedule & Costs*

### **PHASE I: 2008; Total Cost \$54,846**

1. Develop Maku‘u Community Center Plan (MFA) (Second-half 2008)
2. Designate land use zoning to ensure county zoning compliance (DHHL) (Second-half 2008)
3. FAA detailed review and approval of proposed land uses (FAA) (Second-half 2008)
4. Execute changes to MFA and FAA land use licenses (DHHL) (Second-half 2008)

### **PHASE 2**

Raise funds for construction. Construct road connecting Kaluahine Street to proposed intersection. (2009).

### **PHASE 3**

Construct community center, Phase I (2011).

### **PHASES 4 & BEYOND**

Construction of remaining Community Center Phase (2012 and beyond).

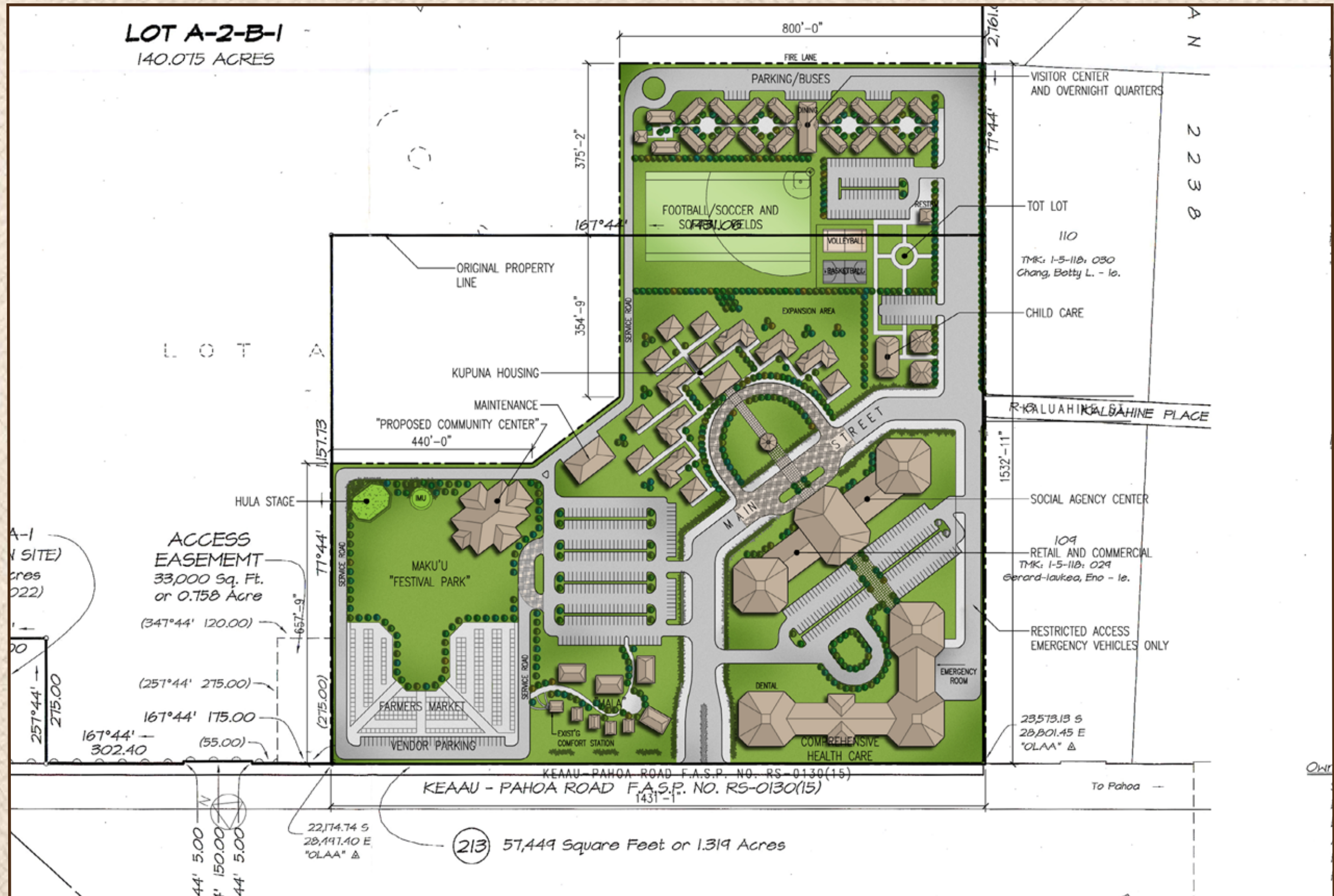
## *Priority Project*

- Implementation of Phase I
- Ensure total funds of Phase I

## *Sources of Funding*

- Department of Hawaiian Home Lands Grants
- United States Department of Agriculture
- State of Hawai‘i Department of Transportation
- United States Department of Housing and Urban Development
- Private Sources







# Priority Project #2 - Maku'u Offsite Water System, Phase 2

## Background

The residents of Maku'u have indicated their desire to have all awarded lots receive reliable water service. The water system currently servicing the Maku'u Farm subdivision does not service 78 lots due to low water pressure. This priority project aims to provide dependable water service to these DHHL lots in Maku'u, enabling the lessees.

The Kilauea aquifer services all Puna Communities, including Maku'u. The Hawai'i State Commission on Water Resource Management (CWRM) has set the sustainable yield of the Kilauea Aquifer at 618 million gallons per day (MGD). The Kilauea Aquifer holds ample water resources to support total use of all DHHL Maku'u land holdings.

However, given the overabundance of water resources in the area, the overwhelming majority of residents in the area still rely on catchment systems for their potable needs. In addition to being an unreliable water source with questionable quality catchment is unappealing to potential residents looking to construct a dwelling on their land. The area also lacks an adequate source of water for irrigation, inhibiting large scale farming activities on homesteads.

Parts of Maku'u do have service provided by Hawai'i County-DWS's well and reservoir site at Keonepoko Nui. These facilities currently provide water to only those lots below the 523-foot elevation. Those 78 farm lots above the service elevation, the proposed Maku'u Mauka subdivision, and a planned community center currently lack potable water service. Construction of a new well, storage and delivery infrastructure would expand service these areas.

The proposed well, reservoir and appurtenances will occupy 1.503 acres of land currently under the jurisdiction of the Department of Land and Natural Resources (DLNR), State of Hawai'i. The ground elevation of the well sits at 824 feet above sea level. The well will have a depth of approximately 900 feet. Construction elements include:

- Drilling of an exploratory well (completed)
- Testing the well for capacity and water quality (completed)
- Conversion of the well to production
- 1.0 million gallon reservoir
- Gated access road to the site
- Pipeline from the reservoir site to the existing Keonepoko 2 reservoir.
- Installation of electrical poles
- Installation of new booster pump
- Ancillary facilities

The Department of Hawaiian Home Lands has already conducted an environmental assessment for this project pursuant to Chapter 343, Hawai'i Revised Statutes. The department issued a finding of no significant impact (FONSI) in 2004. An exploratory well has been completed.

The installation of a dedicated system for Maku'u would provide reliable water service for home lands in the area, allowing more Hawaiians to live on their land.

## Timeline

- Complete Environmental Assessment (Accepted 2004)
- Construct Exploratory Well (Completed 2005)
- Submit Grant Application to USDA (April 2008)
- Design and Engineering (First Half 2009)
- Construction (Second Half 2009)

## Partners & Stakeholders

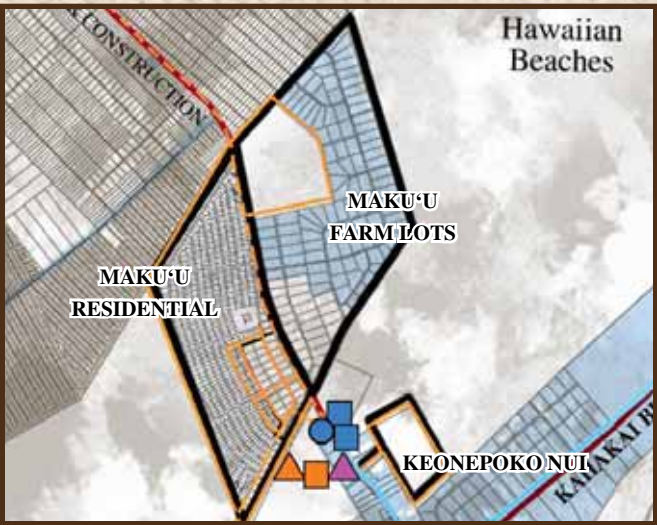
- Department of Hawaiian Home Lands
- County of Hawai'i
- United States Department of Agriculture

## Costs

Permitting, Engineering and Design	\$ 308,700
Construction	\$5,145,000
Project Contingency	\$ 103,300
<b>TOTAL</b>	<b>\$5,557,000</b>

## Funding

Funding for the construction of the water system would be derived from a combination of sources. The Department of Hawaiian Home Lands would provide approximately 7-10% of the costs. The remainder would come from the United States Department of Agricultural Rural Development Office in the form of grants and loans. DHHL projects to submit the application for federal funding and aid in mid-2008.



Blue lots are less than 500 ft. level.





# Priority Project #3 - Kea'au-Pāhoa Road Widening & Maku'u Intersection Improvements

## Background

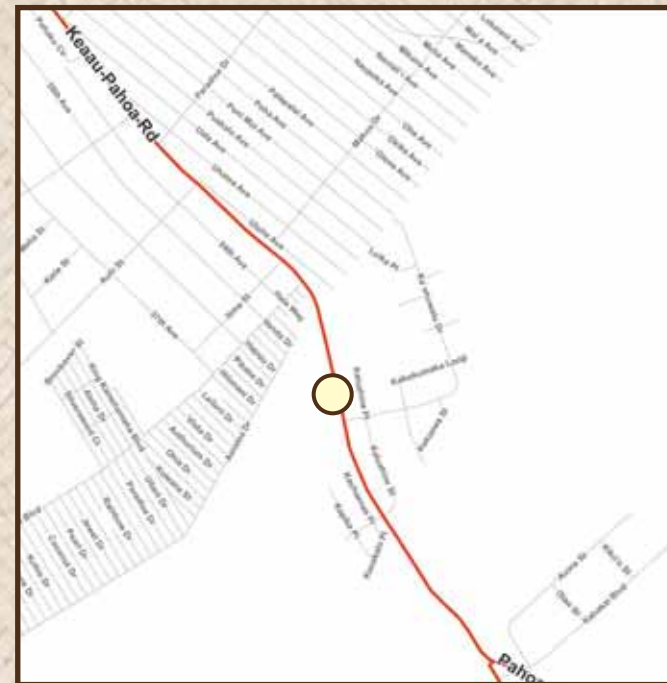
Over the past decade, the population along the Kea'au-Pāhoa Road corridor has skyrocketed. According to the Census 2000, the population in Puna grew more than 50% since the last census in 1990 (see Regional Demographics page). Today Puna remains largely residential and lacks a large employment center. Combined with the large number of Puna residents that make the commute to Hilo, tourists also utilize these roads to see the black sand beaches of Kalapana. Many residents make the daily commute in and out of Hilo for work, placing traffic pressure on the only highway in and out of the area. Many tourists also travel the road to see the black sand beaches created by Kīlauea's latest flow to enter the area in the late 1980's to early 1990's. The combination of high tourist traffic and Hilo commuters can make an already long commute out of Puna even longer. Widening of the highway is required to accommodate the additional traffic and make the commute safer for drivers.

The Maku'u Farmers' Market depends heavily on drive-by traffic for its business. However, heavy travel along the highway makes it difficult to access the site by either a left turn from the east-bound lane, or to slow down in the west-bound direction to make a right. Vehicular entry and exist has now created a significant safety hazard to motorists, and requires intersection improvements.

In the 2006 Hawai'i State Legislative session,, the State Department of Transportation received \$650,000 to create highway access improvements for the Maku'u Farmers' Market. Bidding for the projected commenced in February 2008 and just recently closed. The intersection improvements include earthwork, constructing auxiliary lanes, widening, cold-planning and resurfacing of existing shoulder, installing shoulder rumble strips, new guardrail, pavement striping, signs and markers.

The intersection also plays a key role in the community's vision for Maku'u. As mentioned in the previous priority project, the community hopes to build a community village that would include a community center, comprehensive medical center, parks, kūpuna housing, etc. The installation of the intersection would connect a proposed road through the community village with Kaluahine Place, creating another entry into Maku'u, and providing easier access to these potential community services.

Though bids received exceeded the planned budget, the DOT control section is currently seeking additional funding. Instead of relying completely on the state for funding, improvements and widening of Kea'au-Pāhoa Road will largely depend on funding from the Federal Highways Administration. However, delays have affected many federally subsidized highway projects due to the costs of the Iraq War. According to the DOT's Statewide Transportation Improvement Plan, or "STIP," construction of the road improvements to the highway have been pushed back a year. Construction should now commence in 2013 instead of 2012. The project is currently in the environmental compliance stages.



The community places priority on completion of both these projects, however the intersection remains the more pressing subject due to the expiration of State funding at the end of the fiscal year.

## Timeline

### KEA'AU-PĀHOA ROAD IMPROVEMENTS AND WIDENING

Environmental Compliance: Ongoing

Design: FY 2010

Right of Way Acquisition: FY 2012

Phase 1 Construction: FY2013

Construction of Future Phases: FYs 2014 thru 2018

### MAKU'U FARMERS' MARKET INTERSECTION IMPROVEMENTS

Award Contract: Spring 2008

Construction: FY2009

## Costs

### KEA'AU-PĀHOA ROAD IMPROVEMENTS AND WIDENING

Planning & Design: \$1,600,000

Right of Way Acquisition: \$1,000,000

Construction (Phase 1) \$28,000,000

### MAKU'U FARMERS' MARKET INTERSECTION IMPROVEMENTS

Planning, Design & Construction: \$650,000

## Sources Of Funding



Funding for the Kea'au-Pāhoa Road Improvements and Widening will come from the State and Federal Governments. Funding for the Maku'u Farmers' Market Intersection Improvements comes from the State. However, should the amount budgeted not cover the improvement costs in the final bid, other sources of funding may be required.





# Priority Project #4 - Maku'u Community Markers

## Background

Many who travel along Kea'au-Pāhoa Road often drive by Maku'u without realizing its status as a distinct community. Maku'u's relative isolation from the major Puna-area residential centers and low visibility from the highway inhibits its development as a separate, recognizable community. Residents have expressed their desire to create a more discrete neighborhood boundary to help that facilitates kinship and common identity between area residents, while galvanizing support behind community efforts. The erection of boundary signs along Kea'au-Pāhoa Road announcing entry and exit into Maku'u would promote a common community identity and camaraderie. Similar projects have experienced marked success.

Installed signs along the Windward Coast of O'ahu between Ka'a'awa and Kahuku have helped travelers distinguish the unique communities along the Ko'olau Mountain Range. These signs helped draw an awareness of these locales, and galvanized an identity for each distinct community. Similar signs installed by the City and County of Honolulu along Nu'uano, Chinatown and Hawai'i Kai have also helped to announce entry into their neighborhoods.

This Priority Project proposes to obtain approvals, design and construct landmark signs along Kea'au-Pāhoa Road notifying residents they are entering Maku'u from the east or west.

## Project Phasing

**PHASE I:** Community Input, Design and Approvals from County and State DOT  
8-12 Months

**PHASE II:** Construction  
6 Months



## Project Costs

Planning, Design & Approvals: \$2,000  
Construction: \$5,000

## Potential Sources of Funding

Department of Hawaiian Home Lands, Department of Housing and Urban Development, Hawai'i Tourism Authority, Pro bono support from licensed architects and contractors.





